



88045159



*United States Department of the Interior
Bureau of Land Management*

*Las Cruces District Office
Mimbres Resource Area*

August 1991



DRAFT
RESOURCE MANAGEMENT PLAN
ENVIRONMENTAL IMPACT STATEMENT



BUREAU OF LAND MANAGEMENT

The Bureau of Land Management is responsible for the balanced management of the Public Land and resources and their various values so that they are considered in the combination that will best serve the needs of the American people. BLM management is based upon the principles of multiple use and sustained yield; a combination of uses that takes into account the long-term needs of future generations of renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and historical values.

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ACKNOWLEDGEMENT

This document represents New Mexico BLM's first fully automated Resource Management plan (RMP), prepared using a Geographic Information System (GIS). Over the last several years, a digital database was constructed consisting of about 40 data themes. Each data theme represents a separate "computerized" map of specific resource information. These data themes were then assembled in different combinations to produce each map in this document, including the resource allocation maps for each Alternative. Due to funding limitations, we were unable to use color maps in the document. As a result, we were not able to include maps of Desired Plant Communities which represent some of the most complex analysis performed with the GIS. However, these maps are available for public review at the Las Cruces District Office and will also be available at the public meetings. We do plan to include color maps in the Approved RMP.

It is our firm belief that the use of a GIS has enhanced the quality and credibility of this RMP by assuring that proposed decisions are as objective as possible. The database that has been created will also serve the BLM and public for years to come by facilitating subsequent activity planning, project planning, and environmental assessments.

Although the use of a GIS greatly enhanced the quality of the RMP, its use added considerable complexity to an already complex planning process. During the formulation of alternatives, the process of developing maps was fraught with frequent, and what often seemed like, insurmountable problems.

It is not often that government documents acknowledge the special efforts of individuals who helped make the planning effort a success. Throughout the process, the Resource and GIS specialists (who utilized the database to produce the maps that are contained in this document) worked under incredible pressure and tight deadlines. Other specialists took the resultant GIS products and fit them into the document production process. All of these people are shown in the list of preparers at the end of Chapter 5. A very special thanks goes to each of them for the extra effort they put into bringing this document to the public.

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT OFFICE
1800 MARQUESS ST.
LAS CRUCES, NEW MEXICO 88005



IN REPLY REFER TO:

Dear Reviewer:

Enclosed for your review and comment is the Draft Mimbres Resource Management Plan (RMP) and Environmental Impact Statement (EIS). This Draft RMP/EIS represents an attempt by management and the planning team to integrate all resources into a single, unified land use plan after considering a reasonable range of alternatives. Your review and comments are needed at this time to ensure that your concerns have been considered in the planning process.

Please direct your comments to the RMP Team Leader, Bureau of Land Management, Mimbres Resource Area, 1800 Marquess, Las Cruces, New Mexico 88005. Written comments must be postmarked no later than November 25, 1991. Also use this address when requesting further information on materials referenced in the Draft RMP/EIS.

A series of five public open house workshops will be held in order for you to obtain information and allow informal discussions between staff, management, and members of the public. These meetings will be held as follows:

DATE/TIME	CITY	LOCATION
September 17, 1991 7:00 p.m.	Deming, NM	Morgan Hall, 109 E. Pine Street
September 18, 1991 7:00 p.m.	Lordsburg, NM	Civic Center, 313 E. 4th Street
September 19, 1991 7:00 p.m.	Silver City, NM	Public Safety Bldg., 1011 N. Hudson
September 24, 1991 7:00 p.m.	El Paso, TX	Rio Grande Council of Governments, 1014 N. Stanton (Old Hotel Dieu Hospital Bldg.)
September 25, 1991 7:00 p.m.	Las Cruces, NM	Las Cruces District Office, 1800 Marquess

Formal oral comments will be received at the following public hearings:

DATE/TIME	CITY	LOCATION
October 22, 1991 7:00 p.m.	Las Cruces, NM	Las Cruces District Office, 1800 Marquess
October 23, 1991 7:00 p.m.	Lordsburg, NM	Civic Center, 313 E. 4th Street

A 10-minute time limit will be placed on all oral comments. Oral comments should be accompanied by a written summary of the presentation. Written and oral comments will be fully considered and evaluated in preparation of the Proposed RMP and Final EIS.

Sincerely,

Tim Salt
Mimbres Resource Area Manager

Enclosure

MIMBRES RESOURCE MANAGEMENT PLAN And ENVIRONMENTAL IMPACT STATEMENT

Draft (X) Final ()

The United States Department of the Interior, Bureau of Land Management

1. Type of Action: Administrative (X) Legislative ()
2. Abstract: This Draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) describes and analyzes four alternatives for managing the public land and resources in the Mimbres Resource Area, New Mexico. They are: (1) Continuation of Current Management (No Action) Alternative, (2) Resource Preservation Alternative, (3) Resource Production Alternative, and (4) Resource Conservation (Preferred) Alternative.
3. Comments have been requested from the individuals, groups, and agencies shown on the distribution list in Chapter 5.
4. For further information contact:

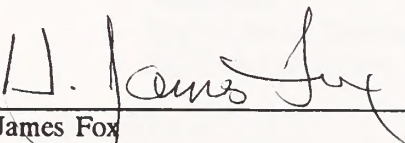
Tim Salt, Area Manager
Bureau of Land Management
Mimbres Resource Area
1800 Marquess
Las Cruces, NM 88005

Telephone (505) 525-8228

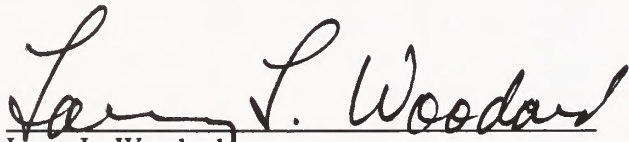
5. Date Draft Filed with Environmental Protection Agency: August 16, 1991
6. Comments on the Draft RMP/EIS must be postmarked no later than: November 25, 1991

RECOMMENDED:

APPROVED:



H. James Fox
District Manager
Las Cruces District Office



Larry L. Woodard
State Director
New Mexico

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THE HISTORY OF THE REIGN OF THE EMPEROR OF THE EAST INDIES, FROM THE DEATH OF THE EMPEROR OF THE WEST INDIES, TO THE PRESENT TIME. IN THREE VOLUMES. VOL. I. THE HISTORY OF THE REIGN OF THE EMPEROR OF THE EAST INDIES, FROM THE DEATH OF THE EMPEROR OF THE WEST INDIES, TO THE PRESENT TIME. IN THREE VOLUMES. VOL. I. THE HISTORY OF THE REIGN OF THE EMPEROR OF THE EAST INDIES, FROM THE DEATH OF THE EMPEROR OF THE WEST INDIES, TO THE PRESENT TIME. IN THREE VOLUMES. VOL. I.

THE HISTORY OF THE REIGN OF THE EMPEROR OF THE EAST INDIES, FROM THE DEATH OF THE EMPEROR OF THE WEST INDIES, TO THE PRESENT TIME. IN THREE VOLUMES. VOL. I. THE HISTORY OF THE REIGN OF THE EMPEROR OF THE EAST INDIES, FROM THE DEATH OF THE EMPEROR OF THE WEST INDIES, TO THE PRESENT TIME. IN THREE VOLUMES. VOL. I.

THE HISTORY OF THE REIGN OF THE EMPEROR OF THE EAST INDIES, FROM THE DEATH OF THE EMPEROR OF THE WEST INDIES, TO THE PRESENT TIME. IN THREE VOLUMES. VOL. I.

SUMMARY

SUMMARY

The Draft Mimbres Resource Management Plan (RMP) and Environmental Impact Statement (EIS) identifies and analyzes the future options for managing the 3,053,820 acres of public land and 4,126,780 acres of Federal mineral estate administered by the Bureau of Land Management (BLM), Las Cruces District, Mimbres Resource Area. The Mimbres Resource Area administers public land and resources (described in detail in Chapters 1 and 3 of this document) in Dona Ana, Luna, Hidalgo, and Grant Counties.

The Mimbres RMP is being prepared using the BLM planning regulations issued under the authority of the Federal Land Policy and Management Act of 1976. When completed, the RMP will provide a comprehensive framework for managing and allocating public land and resources within the Mimbres Resource Area over the next 20 years.

The contents of this Draft RMP/EIS primarily focus on resolving key resource management planning issues. These issues are:

- Land Ownership Adjustments
- Areas of Critical Environmental Concern (ACECs) and Special Management Areas (SMAs)
- Vehicle Management
- Access

In addition to the issues, the following management concerns are also addressed: rights-of-way; minerals; recreation; cultural and paleontological resources; wildlife habitat; soil, air, and water; vegetation; riparian and arroyo habitat; and special status species. A major driving force behind the preparation of the RMP is the burgeoning population of the Las Cruces/El Paso areas and the resultant increased demands on the public land within the Mimbres Resource Area.

The resolution of these issues and concerns can only be achieved within the context of proper land-use planning.

Each of the issues, management concerns, and planning criteria are discussed in Chapter 1. Those aspects of current management that are not at issue are covered in the Continuing Management Guidance and Actions section of Chapter 2. The Continuing Management Guidance and Actions were developed primarily from laws, regulations, manuals, and existing land-use plans and apply to all alternatives.

Four RMP alternatives have been developed to describe the different management options available to BLM for the Mimbres Resource Area. These alternatives were developed to respond to the issues and concerns expressed by the public and BLM early in the planning process. Each alternative presents a different blend and balance of resource allocations and uses. Together with the Continuing Management Guidance and Actions, each of the alternatives forms a separate, feasible land-use plan.

The alternatives in this EIS are designated to provide general management guidance. Specific projects for a given area or resource will be detailed in future activity plans. These plans discuss more precisely how a particular area or resource is to be managed, and ensure compliance with the approved RMP's resolution of the issues.

The four alternatives developed for the Mimbres RMP are summarized in Table S-1 and are further described in Chapter 2. The direct, indirect, and cumulative impacts anticipated from all of these alternatives are described in Chapter 4, and a comparative summary of impacts is included in Table S-2.

TABLE S-1
ALTERNATIVE SUMMARY

ISSUE/CONCERN	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
LAND OWNERSHIP ADJUSTMENTS	Dispose of 77,145 acres. Acquire 18,980 acres of State trust land	Dispose of 42,090 acres. Acquire 129,170 acres of State trust land.	Dispose of 232,710 acres. Acquire 56,050 acres of State trust land.	Dispose of 158,460 acres. Acquire 93,110 acres of State trust land.
ACECs AND OTHER SMAs	Acquire 13,720 acres of private land. Continue 4 ACECs totalling 16,300 acres.	Acquire 97,800 acres of private land. Designate 30 ACECs totalling 320,980 acres (includes 4 existing ACECs).	Acquire 37,480 acres of private land. Designate 27 ACECs totalling 86,980 acres (includes 4 existing ACECs).	Acquire 56,210 acres of private land. Designate 27 ACECs totalling 267,910 acres (includes 4 existing ACECs).
		Designate Butterfield Trail (15,690 acres) and Continental Divide National Scenic Trail (75,270 acres).	Designate Butterfield Trail (15,690 acres) and Continental Divide National Scenic Trail (21,800 acres).	Designate Butterfield Trail (15,690 acres) and Continental Divide National Scenic Trail (48,450 acres).
	Continue interim management on 14 existing wilderness study areas (WSAs) totalling 390,800 acres.	Propose to study 4 new areas totalling 34,480 acres for wilderness potential. Continue 14 existing WSAs totalling 390,800 acres.	Propose to study 4 new areas totalling 34,480 acres for wilderness potential. Continue 14 existing WSAs totalling 390,800 acres.	Propose to study 4 new areas totalling 34,480 acres for wilderness potential. Continue 14 existing WSAs totalling 390,800 acres.
		Identify two wild and scenic river study areas for Gila Lower and Middle Box totalling 3,240 acres.	Identify two wild and scenic river study areas for Gila Lower and Middle Box totalling 3,240 acres.	Identify two wild and scenic river study areas for Gila Lower and Middle Box totalling 3,240 acres.
VEHICLE MANAGEMENT	Continue designation of 4,160 acres open.	Continue designation of 4,160 acres open.	Designate 16,190 acres open.	Designate 16,190 acres open.
	Continue designation of 380,430 acres limited to existing roads and trails.	Designate 0 acres limited to existing roads and trails.	Designate 2,827,330 acres limited to existing roads and trails.	Designate 2,371,630 acres limited to existing roads and trails.
	Continue designation of 74,200 acres limited to designated roads and trails.	Designate 2,938,920 acres limited to designated roads and trails.	Designate 155,400 acres limited to designated roads and trails.	Designate 539,640 acres limited to designated roads and trails.
	Continue designation of 12,590 acres closed.	Designate 110,790 acres closed.	Designate 54,900 acres closed.	Designate 126,360 acres closed.
	Continue 2,582,440 acres undesignated.			

TABLE S-1
ALTERNATIVE SUMMARY

ISSUE/CONCERN	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
ACCESS	BLM's transportation system would rely mainly on the existing system of Federal, State and County roads. Develop other access if needed (through a plan amendment).	BLM's transportation system would rely mainly on the existing system of Federal, State, and County roads. Develop other access if needed (through a plan amendment) with emphasis on pedestrian, non-vehicular access.	Develop access to 24 areas. Emphasis on vehicular access.	Develop access to 19 areas. Emphasis on vehicular or pedestrian access depending on the area and resource conflicts.
RIGHTS-OF-WAY (ROWS)	Continue existing ROW corridor designations (61,405 acres).	Designate 317,230 acres ROW exclusion areas and 1,134,570 acres ROW avoidance areas. Continue existing ROW corridor designations, even where they overlap with exclusion and avoidance areas.	Designate 84,950 acres ROW exclusion areas and 303,480 acres ROW avoidance areas. Continue existing ROW corridor designations, even where they overlap with exclusion and avoidance areas.	Designate 264,870 acres ROW exclusion areas and 783,400 acres ROW avoidance areas. Continue existing ROW corridor designations, even where they overlap with exclusion and avoidance areas.
MINERALS	Remainder of Resource Area open to ROWs subject to standard stipulations (2,992,415 acres).	Remainder of Resource Area open to ROWs subject to standard stipulations (1,602,020 acres).	Remainder of Resource Area open to ROWs subject to standard stipulations (2,665,390 acres).	Remainder of Resource Area open to ROWs subject to standard stipulations (1,970,180 acres).
	Continue withdrawal of 19,000 acres from locatable mineral entry.	Withdraw 109,520 acres from locatable mineral entry.	Open to locatable mineral entry.	Withdraw 64,000 acres from locatable mineral entry.
	Open to mineral material disposal subject to standard stipulations.	Close 576,800 acres to mineral material disposal.	Close 124,470 acres to mineral material disposal.	Close 331,950 acres to mineral material disposal.
	Continue closure of 409,700 acres to mineral leasing. Continue current leasing stipulations for oil and gas, 361,400 acres and geothermal, 360,600 acres. Continue leasing with no surface occupancy on 8,900 acres for oil, gas, and geothermal. Remainder of Resource Area open to mineral leasing subject to standard terms and conditions (oil and gas, 3,358,300 acres; geothermal, 3,326,300 acres; and nonenergy leasables, 3,695,900 acres).	Close 320,940 acres to mineral leasing. Continue current stipulations for mineral leasing for 274,000 acres. 92,000 acres would be open to leasing with no surface occupancy. Remainder of Resource Area open to mineral leasing subject to standard terms and conditions (oil and gas, 3,451,300 acres; geothermal, 3,418,500 acres; and nonenergy leasables, 3,692,500 acres).	Close 0 acres to mineral leasing. Continue current stipulations for oil and gas leasing for 302,000 acres and geothermal, 360,600 acres. 42,300 acres would be open to leasing with no surface occupancy. Remainder of Resource Area open to fluid mineral leasing subject to standard terms and conditions (oil and gas, 3,794,000 acres; geothermal, 3,761,200 acres; and nonenergy leasables, 3,761,200 acres).	Close 266,950 acres to mineral leasing. Continue current stipulations for fluid mineral leasing for 274,000 acres. 65,000 acres would be open to leasing with no surface occupancy. Remainder of Resource Area open to leasing subject to standard terms and conditions (oil and gas, 3,532,300 acres and geothermal and nonenergy leasables, 3,499,500 acres).

TABLE S-1
ALTERNATIVE SUMMARY

ISSUE/CONCERN	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
RECREATION	Continue management of 2 existing Special Recreation Management Areas (SRMAs) in accordance with existing Coordinated Resource Management Plans. Remainder of Resource Area managed primarily for dispersed recreation opportunities.	Continue management of 2 existing SRMAs in accordance with existing Coordinated Resource Management Plans. Remainder of Resource Area managed primarily for dispersed recreation opportunities.	Designate 7 additional SRMAs and prepare Recreation Area Management Plans (RAMPs). Acquire and manage 5 State parks (if State is willing to transfer). Develop primitive campsites in 5 areas. Continue management of 2 existing SRMAs in accordance with existing Coordinated Resource Management Plans. Remainder of Resource Area managed primarily for dispersed recreation opportunities.	Designate 2 additional SRMAs and prepare RAMPs. Continue management of 2 existing SRMAs in accordance with existing Coordinated Resource Management Plans. Remainder of Resource Area managed primarily for dispersed recreation opportunities.
CULTURAL AND PALEONTOLOGICAL RESOURCES	Continue management in accordance with 3 existing Cultural Resource Management Plans. Protect all other sites in accordance with existing policies and laws.	Manage in accordance with prescriptions for 11 cultural and paleontological ACECs. Designate Butterfield Trail for historical resources. Continue management in accordance with 3 existing Cultural Resource Management Plans. Protect all other sites in accordance with existing policies and laws.	Manage in accordance with prescriptions for 13 cultural and paleontological ACECs. Designate Butterfield Trail for historical resources. Provide interpretation for tourism at 4 sites with emphasis on facilities or interpretation. Continue management in accordance with 3 existing Cultural Resource Management Plans. Protect all other sites in accordance with existing policies and laws.	Manage in accordance with prescriptions for 11 cultural and paleontological ACECs. Provide interpretation for tourism at 4 sites with emphasis on passive interpretation such as signing. Continue management in accordance with 3 existing Cultural Resource Management Plans. Protect all other sites in accordance with existing policies and laws.
WILDLIFE HABITAT	Continue management of 6 existing habitat management plans (HMPs).	Develop new HMPs for 6 areas. Continue management of 6 existing HMPs. Remove ibex from the Florida Mountains. Population goals for HMP areas would be 4,650 deer, 300 antelope, and 1,325 bighorn.	Develop new HMPs for 6 areas. Continue management of 6 existing HMPs. Population goals for HMP areas would be 2,125 deer, 300 antelope, 1,250 bighorn, and 400 ibex.	Develop new HMPs for 6 areas. Continue management of 6 existing HMPs. Population goals for HMP areas would be 3,950 deer, 300 antelope, 1,250 bighorn, and 400 ibex.
SOIL, AIR, AND WATER	Continue to implement watershed management provisions of existing Gila River Coordinated Resource Management Plan. Continue to incorporate provisions for erosion control and air quality protection into all surface-disturbing actions.	Develop watershed management plans for 8 critical watershed areas (including provisions of existing Gila River Coordinated Resource Management Plan). Continue to incorporate provisions for erosion control and air quality protection into all surface-disturbing actions.	Develop watershed management plans for 8 critical watershed areas (including provisions of existing Gila River Coordinated Resource Management Plan). Continue to incorporate provisions for erosion control and air quality protection into all surface-disturbing actions.	Develop watershed management plans for 8 critical watershed areas (including provisions of existing Gila River Coordinated Resource Management Plan). Continue to incorporate provisions for erosion control and air quality protection into all surface-disturbing actions.

TABLE S-1
ALTERNATIVE SUMMARY

ISSUE/CONCERN	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
VEGETATION	<p>Continue existing vegetation sale areas.</p> <p>Consider chemical land treatments on 67,742 acres in accordance with existing land use plans.</p>	<p>Continue existing vegetation sale areas in vicinity of Las Cruces. Develop new sale area between Deming and Lordsburg.</p> <p>Primary desired plant community goals would be watershed, aesthetic, and biodiversity values without the use of chemical herbicides for treating brush-dominated areas. Desired plant community objectives would be met by a combination of proper grazing management and land treatments consisting of prescribed natural fire and prescribed burning. Burn a maximum of 10,000 acres per year within a maximum potential area of 677,690 acres.</p>	<p>Designate land disposal area on East Mesa as vegetation sale area. Develop new sale area between Deming and Lordsburg.</p> <p>Primary desired plant community goals would be providing for maximum livestock forage production while maintaining other uses. Desired plant community objectives would be met by a combination of proper grazing management and land treatments consisting of prescribed burning and chemical treatments of brush-dominated areas. Burn or chemically treat a maximum of 10,000 acres per year within a maximum potential area of 677,690 acres for burning and 1,470,370 acres for chemical treatment.</p>	<p>Continue existing vegetation sale areas and expand into adjacent land disposal areas as needed. Develop new sale area between Deming and Lordsburg.</p> <p>Primary desired plant community goals would be providing for livestock, wildlife, watershed, aesthetic, and biodiversity values. Desired plant community objectives would be met by a combination of proper grazing management and land treatments consisting of prescribed natural fire and prescribed burning and chemical treatments of brush-dominated areas. Burn or chemically treat a maximum of 10,000 acres per year within a maximum potential area of 677,690 acres for burning and 1,080,530 acres for chemical treatment.</p>
RIPARIAN AND ARROYO HABITATS	<p>Continue elimination of livestock grazing on 7,826 acres.</p> <p>Continue management and protection of 5 areas in accordance with existing management plans.</p>	<p>Eliminate livestock grazing on 201,420 acres.</p> <p>Manage in accordance with prescriptions of 6 riparian ACECs. Continue management and protection of 4 areas in accordance with existing management plans. Secure instream flows for Gila Lower and Middle Box ACECs when State law allows.</p>	<p>Eliminate livestock grazing on 6,546 acres.</p> <p>Manage in accordance with prescriptions for 5 riparian ACECs. Continue management and protection of 4 areas in accordance with existing management plans. Secure instream flows Gila Lower and Middle Box ACECs when State law allows.</p>	<p>Eliminate livestock grazing on 8,026 acres.</p> <p>Manage in accordance with prescriptions for 6 riparian ACECs. Continue management and protection of 4 areas in accordance with existing management plans. Secure instream flows for Gila Lower and Middle Box ACECs when State law allows.</p>

TABLE S-1
ALTERNATIVE SUMMARY

ISSUE/CONCERN	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
SPECIAL STATUS SPECIES	<p>Continue management and protection in accordance with Organ Mountains Coordinated Resource Management Plan. Elsewhere continue management and protection based upon existing laws, regulations, and policies.</p>	<p>Manage in accordance with prescriptions for 11 ACECs with special status species. Continue management and protection in accordance with Organ Mountains Coordinated Resource Management Plan. Elsewhere continue management and protection based upon existing laws, regulations, and policies.</p>	<p>Manage in accordance with prescriptions for 9 ACECs with special status species. Continue management and protection in accordance with Organ Mountains Coordinated Resource Management Plan. Elsewhere continue management and protection based upon existing laws, regulations, and policies.</p>	<p>Manage in accordance with prescriptions for 11 ACECs with special status species. Continue management and protection in accordance with Organ Mountains Coordinated Resource Management Plan. Elsewhere continue management and protection based upon existing laws, regulations, and policies.</p>

TABLE S-2
SUMMARY OF ANTICIPATED IMPACTS

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
MINERALS				
	Land identified for disposal has low potential for oil and gas occurrence and development. Land that remains closed to leasing has low oil and gas potential and moderate geothermal potential and would be unavailable for exploration.	Land identified for disposal has low potential for oil and gas occurrence and development. Land that remains closed to leasing has low oil and gas potential and moderate geothermal potential and would be unavailable for exploration.	Land identified for disposal has low potential for oil and gas occurrence and development. Land that remains closed to leasing has low oil and gas potential and moderate geothermal potential and would be unavailable for exploration.	Land identified for disposal has low potential for oil and gas occurrence and development. Land that remains closed to leasing has low oil and gas potential and moderate geothermal potential and would be unavailable for exploration.
	Disposal of land near Las Cruces that has moderate to high potential for geothermal resources would preclude leasing and development.	Closing the Rincon, San Diego Mountains, Dona Ana Mountains, and Organ/Franklin Mountains ACECs to geothermal leasing and the disposal of land near Las Cruces that has moderate to high potential for geothermal resources would preclude leasing and development.	Disposal of land near Las Cruces that has moderate to high potential for geothermal resources would preclude leasing and development.	Disposal of land near Las Cruces that has moderate to high potential for geothermal resources would preclude leasing and development.
	Land identified for disposal west of the Organ Mountains has high potential for locatable mineral occurrence and loss of those minerals from public ownership would preclude exploration and development.	The Lordsburg Playa ACEC would be closed to leasing and therefore unavailable for exploration and development of sodium resources.	Land identified for disposal west of the Organ Mountains and in the Silver City area has high potential for locatable mineral occurrence and loss of those minerals from public ownership would preclude exploration and development.	Land identified for disposal west of the Organ Mountains and in the Silver City area has high potential for locatable mineral occurrence and loss of those minerals from public ownership would preclude exploration and development.
	Disposal of land near Las Cruces that has high potential for sand and gravel would preclude development.	The Cooke's Range, Florida Mountains, and Organ/Franklin Mountains ACECs have high potential for locatable minerals occurrence and closing those areas to mining would preclude exploration and development.	Disposal of land near Las Cruces that has high potential for sand and gravel would preclude development.	The Lordsburg Playa ACEC would be closed to leasing and therefore unavailable for exploration and development of sodium resources.
		Disposal of land near Las Cruces that has high potential for sand and gravel would preclude development.		The Organ/Franklin Mountains ACEC has high potential for locatable minerals occurrence and closing that area to mining would preclude exploration and development.
				Disposal of land near Las Cruces that has high potential for sand and gravel would preclude development.

TABLE S-2
SUMMARY OF ANTICIPATED IMPACTS

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
LANDS	Land ownership adjustments on 1.4 percent of the Resource Area would help block up public land and improve manageability.	Land ownership adjustments on 2.5 percent of the Resource Area would help block up public land and improve manageability. ROW exclusion and avoidance areas could require longer routes for ROW applicants.	Land ownership adjustments on 8 percent of the Resource Area would help block up public land and improve manageability. ROW exclusion and avoidance areas could require longer routes for ROW applicants.	Land ownership adjustments on 5 percent of the Resource Area would help block up public land and improve manageability. ROW exclusion and avoidance areas could require longer routes for ROW applicants.
ACCESS	Access could be lost in disposal areas if easements are not reserved. Acquisition of State trust and private lands would improve access.	Access would not be significantly affected by disposal of isolated parcels. Acquisition of State trust and private lands would improve access throughout the Resource Area. Vehicle access would be eliminated in 7 ACECs and within 1 mile of the Mexican border.	Access would not be significantly affected by disposal of isolated parcels, but could be lost in larger blocks of disposal areas if easements are not reserved. Acquisition of State trust and private lands would improve access in ACECs and other Special Management Areas (SMAs). Vehicle access would be eliminated within 1 mile of the Mexican border. Development of new access routes would improve access to most blocked public land areas.	Access would not be significantly affected by disposal of isolated parcels, but could be lost in larger blocks of disposal areas if easements are not reserved. Acquisition of State trust and private lands would improve access in ACECs and other SMAs. Vehicle access would be eliminated south of the Anapra Road and State Road near the Mexican border. Development of new access routes would improve access to many blocked public land areas.
LIVESTOCK GRAZING	Livestock grazing would benefit from chemical vegetation treatments which would provide additional forage for livestock. Undesignated vehicle use areas and elimination of livestock grazing could result in a loss of AUs or increase conflicts with human users. Land disposal would result in a loss of up to 619 AUs.	Livestock grazing would benefit from acquisition of lands and vehicle use limitations by limiting the interaction between humans and livestock and maintaining the land base. ACECs which include the elimination of livestock grazing and 30 percent use on black grama could result in a loss of up to 2,451 AUs.	Livestock grazing would benefit from acquisition of lands, vehicle use limitations, watershed management plans, desired plant community changes through chemical vegetation treatments, and 50 percent use on black grama, which would limit interaction between humans and livestock and improve forage conditions. SRMAs and the elimination of livestock grazing could result in a loss of AUs and limiting livestock use. Land disposal would result in a loss of up to 31,890 AUs.	Livestock grazing would benefit from acquisition of lands, vehicle use limitations, watershed management plans, and desired plant community changes through chemical vegetation treatments, which would limit interaction between humans and livestock and improve forage conditions. ACECs, elimination of livestock grazing, and 40 percent use on black grama could result in a loss of AUs. Land disposal would result in a loss of up to 7,245 AUs.

TABLE S-2
SUMMARY OF ANTICIPATED IMPACTS

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
VEGETATION	<p>Vegetation resources would be enhanced by land acquisitions, existing ACECs, chemical brush control, and the elimination of livestock grazing by protecting vegetation resources and increasing public awareness. Land disposal and undesignated vehicle use could result in vegetation loss. Vegetation diversity and ground cover would improve on about 70,000 acres as a result of land treatments.</p>	<p>Vegetation resources would be enhanced by land acquisitions, ACECs, vehicle use limitations, watershed management plans, 30 percent use of black grama, and the elimination of livestock grazing. Land disposal could result in vegetation loss. Large areas would remain in their present brush-dominated condition.</p>	<p>Vegetation resources would be enhanced by land acquisitions, ACECs, vehicle use limitations, SRMAs, desired plant management plans, and elimination of livestock grazing. Land disposal could result in vegetation loss. Vegetation diversity and ground cover would improve on about 1.5 million acres as a result of desired plant community objectives and land treatments.</p>	<p>Vegetation resources would be enhanced by land acquisitions, ACECs, vehicle use limitations, watershed management plans, desired plant community, 40 percent use on black grama, and the elimination of livestock grazing. Land disposal could result in vegetation loss. Vegetation diversity and ground cover would improve on about 1.0 million acres as a result of desired plant community objectives and land treatments.</p>
SOIL, AIR, AND WATER	<p>Soils would be disturbed by minerals activities and off-road vehicle use on undesignated lands. The soil resource would benefit from HMPs and vegetation treatments.</p>	<p>Soil disturbance and erosion would decrease as a result of SMA management prescriptions, watershed management plans, six additional HMPs, off-road vehicle limitations, and closure of areas to minerals activities.</p>	<p>Soils could be disturbed by land disposal, minerals activities, and access development. The soil resource would benefit from SMA management prescriptions, watershed management plans, and six additional HMPs.</p>	<p>Soil disturbance and erosion would decrease as a result of SMA management prescriptions, watershed management plans, and six additional HMPs.</p>
	<p>Short-term increase in airborne dust would occur with off-road vehicle use, minerals activities, and vegetation treatments.</p>	<p>Airborne dust would be reduced by SMA management prescriptions, watershed management plans, six HMPs, off-road vehicle limitations, and closure of areas to minerals activities which would protect and enhance vegetation which would protect the soil surface from wind erosion.</p>	<p>Short-term increases in airborne dust could occur as a result of land disposal, access development, and minerals activities. Watershed management plans, vegetation treatments, and off-road vehicle limitations would reduce airborne dust by reducing vegetation loss and reducing wind erosion of exposed soils.</p>	<p>Airborne dust would be reduced by SMA management prescriptions, watershed management plans, six additional HMPs, off-road designations, ROW restrictions, and vegetation treatments which would protect and enhance surface vegetation and reduce soil surface disturbance.</p>
	<p>Water resources would benefit from watershed management and vegetation treatments.</p>	<p>Water resources would benefit from reduced erosion, increased percolation of water into the ground, and protected or improved watersheds.</p>	<p>Water resources would benefit from planned actions which would enhance or protect surface vegetation, reduce runoff and water erosion of exposed soil, and increase percolation of water into the ground.</p>	<p>Water resources would benefit from planned actions which would enhance or protect surface vegetation, reduce runoff and water erosion of exposed soil, and increase percolation of water into the ground.</p>

TABLE S-2
SUMMARY OF ANTICIPATED IMPACTS

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
WILDLIFE	Wildlife and wildlife habitat would be disturbed by mineral exploration and development and by open and undesignated off-road vehicle use.	Wildlife habitat degradation would be eliminated or reduced and wildlife displacement would not occur as a result of closure of areas to minerals activities, increased animal unit months (AUMs) reserved for wildlife, six additional HMPs, elimination of livestock grazing in key habitat areas, off-road vehicle limitations, watershed management plans, and SMA management prescriptions.	Wildlife habitat could be degraded and wildlife could be displaced by land disposal, off-road vehicle open areas, access development, and minerals activities. Wildlife habitat would be protected or enhanced by watershed management plans, SMA management prescriptions, off-road vehicle limitations, and six additional HMPs.	Wildlife habitat would be protected or enhanced and habitat degradation prevented by closure of areas to minerals activities, elimination of livestock grazing in key habitat areas, off-road vehicle limitations, watershed management plans, vegetation treatments, and SMA management prescriptions.
CULTURAL AND PALEONTOLOGICAL RESOURCES	Cultural resources could be disturbed by mining activities and off-road vehicle travel. Diversity of sites on public land could be enhanced by land acquisition and reduced by land disposal. Protection of riparian areas could reduce erosion damage of cultural resources.	Land acquisitions could bring additional cultural resources under BLM administration and protection. Cultural values would be protected by management prescriptions for ACECs. Disturbance and damage of cultural resources would be reduced by off-road vehicle designations, ROW avoidance and exclusion areas, mineral closures, and riparian area protection.	Land acquisitions would bring additional cultural resource under BLM administration and protection. Cultural values would be protected by management prescriptions for ACECs. Disturbance and damage of cultural resources would be reduced by off-road vehicle limitations and riparian area protection. Opening the entire Resource Area to mineral entry, developing new access, and developing primitive campsites could result in increased damage to cultural resources.	Land acquisitions would bring additional cultural resources under BLM administration and protection. Cultural values would be protected by management prescriptions for ACECs. Disturbance and damage of cultural resources would be reduced by off-road vehicle designations, mineral closures, and riparian areas protection. Acquisition of legal public access in the Cooke's Range could result in increased vandalism to cultural resources.

TABLE S-2
SUMMARY OF ANTICIPATED IMPACTS

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
RECREATION	<p>Recreation opportunities would be increased by recreation facility development, wildlife habitat actions, watershed stabilization, vegetation treatments, and cultural and paleontological resource management.</p>	<p>Recreation opportunities would be enhanced by land ownership adjustments, development of foot access, wildlife HMPs, prescribed burning, and elimination of livestock grazing. ROW exclusion and avoidance areas and mineral closures would help preserve the natural integrity and primitive recreation quality of those areas. Off-road vehicle opportunities would be eliminated by off-road vehicle designations and land disposal. Elimination of ibex would eliminate opportunities to hunt or photograph ibex on public land in the United States.</p>	<p>Recreation opportunities would be enhanced by land ownership adjustments, development of new access, development of recreation sites, acquisition of six State parks, wildlife HMPs, watershed management, and livestock grazing management. ROW exclusion and avoidance areas would help preserve the natural integrity and primitive recreation quality of ACECs. Most existing off-road vehicle use opportunities would be eliminated by ORV designations and land disposals, but designation of new open areas would increase opportunities for off-road vehicle use over present levels.</p>	<p>Recreation opportunities would be enhanced by land ownership adjustments, development of new access, development of recreation sites, acquisition of six State parks, wildlife HMPs, watershed management, and livestock grazing management. ROW exclusions and mineral development restrictions would help preserve the natural integrity and primitive recreation quality of ACECs. Off-road vehicle use would be open on less than 1 percent of the Resource Area.</p>
VISUAL RESOURCES	<p>Most activities are currently subject to restrictions that would keep those actions within established visual resource management (VRM) guidelines.</p>	<p>Visual resource management would be enhanced by acquiring lands in Class I and II areas. Visual resources would be protected by SMA designations, vehicle designations, ROW exclusion and avoidance areas, and minerals closures or limitations.</p>	<p>Visual resource management would be enhanced by acquiring lands in Class I and II areas. Visual resources would be protected by SMA designations, vehicle designations, ROW exclusion and avoidance areas, and minerals closures or limitations.</p>	<p>Visual resource management would be enhanced by acquiring lands in Class I and II areas. Visual resources would be protected by SMA designations, vehicle designations, ROW exclusion and avoidance areas, and minerals closures or limitations.</p>
WILDERNESS	<p>Land acquisitions, vehicle closures, development of foot access routes, wildlife habitat management, watershed management, and vegetation manipulations would enhance wilderness management and values.</p>	<p>Land acquisitions, wilderness, and wild and scenic river studies, vehicle designations, development of foot access, wildlife HMPs, watershed management, elimination of ibex, fire management, elimination of livestock, and establishment of instream flows would enhance wilderness resources and uses by improving the stability of natural systems and resulting in increased naturalness of wilderness resources.</p>	<p>Land acquisitions, wilderness designations, wild or scenic river designations, access development, wildlife HMPs, watershed management, fire management, livestock grazing management, and establishment of instream flows would enhance wilderness resources and uses by stabilizing soils and improving stability of natural systems.</p>	<p>Land acquisitions, wilderness designations, wild or scenic river designations, vehicle designations, access development, wildlife HMPs, watershed management, fire management, livestock grazing management, and establishment of instream flows would enhance wilderness resources and uses by improving the stability of natural systems and resulting in increased naturalness of wilderness resources.</p>

TABLE S-2
SUMMARY OF ANTICIPATED IMPACTS

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
SPECIAL STATUS SPECIES	<p>Special status plants would benefit from acquisition of lands, existing ACECs, chemical brush treatments, and the elimination of livestock grazing by limiting uses which could cause loss of habitat. Land disposal and undesignated vehicle use could have negative impacts to special status species from potential habitat loss. Chemical brush control could cause some habitat loss.</p> <p>Special status animals would benefit from land acquisitions, existing ACECs, off-road vehicle restrictions, and wildlife HMPs. Disturbances to special status animals could result from dispersed recreation activities, undesignated off-road vehicle use, and minerals activities.</p>	<p>Special status plants would benefit from acquisition of lands, ACECs designations, vehicle use limitations, watershed management plans, and the elimination of livestock grazing by limiting use, avoiding an area, or providing plant and habitat protection. Land disposal actions could have negative impacts to special status plants from the loss of potential habitat.</p> <p>Special status animals would benefit from habitat protection and enhancement and less animal displacement resulting from land acquisitions, SMA management prescriptions, off-road vehicle restrictions, mineral withdrawals, watershed management plans, and elimination of livestock grazing from key habitat areas.</p>	<p>Special status plants would benefit from acquisition of lands, SMA and ACEC designations, vehicle use limitations, SRMAs, watershed management plans, and the elimination of livestock grazing by limiting use or avoiding an area. Land disposal could have negative impacts to special status plants from the loss of potential habitat.</p> <p>Special status animals would benefit from land acquisitions, SMA management prescriptions, and off-road vehicle restrictions, which would prevent habitat degradation and animal displacement. Off-road vehicle open areas, minerals activities, and recreation activities could cause habitat degradation and animal displacement.</p>	<p>Special status plants would benefit from land acquisitions, ACECs and SMA designations, vehicle use limitations, watershed management plans, and the elimination of livestock grazing by limiting use or avoiding an area. Land disposal could have negative impacts to special status plants from the loss of potential habitat.</p> <p>Special status animals would benefit from land acquisitions, SMA management prescriptions, off-road vehicle restrictions, mineral withdrawals, watershed management plans, and elimination of livestock grazing from key habitat areas, which would prevent habitat degradation and animal displacement.</p>
RIPARIAN AND ARROYO HABITATS	<p>Riparian and arroyo habitats would be degraded by minerals activities and off-road vehicle use which would remove vegetation and disturb arroyo channels.</p>	<p>Riparian and arroyo habitats would benefit from SMA management prescriptions, closure of areas to minerals activities, elimination of livestock grazing, off-road vehicle restrictions, and six additional HMPs which would prevent degradation of riparian and arroyo vegetation.</p>	<p>Arroyo habitats could be degraded by land disposal, recreation use, and minerals activities. SMA management prescriptions and six additional HMPs would help protect vegetation, reduce arroyo channel disturbance, and enhance riparian values.</p>	<p>Riparian and arroyo habitats would benefit from SMA management prescriptions, closure of areas to minerals activities, elimination of livestock grazing, off-road vehicle restrictions, and six additional HMPs which would protect vegetation, reduce soil disturbance, and protect stream and arroyo channels from disturbance or degradation.</p>

TABLE S-2
SUMMARY OF ANTICIPATED IMPACTS

RESOURCE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
SOCIAL AND ECONOMIC CONDITIONS	<p>Even though payment-in-lieu of taxes (PILT) payments would be reduced, land disposal would result in an increase of \$900,000 in property tax receipts and the value of taxable property in Dona Ana County would increase by \$175 million.</p> <p>Minerals closures would not be expected to have a significant economic impact.</p> <p>Recreation facilities would accommodate 175,000 visitor use days per year and generate \$750,000 in gross receipts.</p>	<p>Land disposal would result in an increase of \$27,000 in property tax receipts and the property tax base in Dona Ana County would increase by \$500,000.</p> <p>Urban expansion would be largely limited to existing private lands, which would concentrate growth to valley land and increase development pressure on farmland.</p> <p>PILT payments in Luna, Hidalgo and Grant counties would decrease by \$30,000 due to disposal, but would increase by approximately \$135,000 as a result of land acquisitions.</p> <p>Livestock grazing elimination in 8 ACECs would result in the loss of \$696,000 in livestock gross receipts including \$58,000 in BLM grazing fees.</p> <p>Minerals closures would not be expected to have a significant impact on the minerals industry.</p> <p>Recreation and cultural facilities would accommodate 325,000 visitor days and generate \$1,625,000 in gross receipts.</p> <p>Wildlife forage allocations could cause a net decrease of \$95,000 in gross receipts from livestock.</p>	<p>Land disposal would result in an increase of \$924,000 in tax receipts in Dona Ana County. Luna and Grant Counties would suffer a net loss of \$6,144 as a result of decreased PILT payments from land disposal that would not be entirely compensated by increase PILT payments from acquisition and increased tax revenues from disposal.</p> <p>Recreational activities would produce \$5 million in gross receipts.</p> <p>Hunter days would increase by 6 percent and hunting gross receipts would increase by \$54,000.</p>	<p>Land ownership adjustments would result in an increase of \$935,000 in property taxes.</p> <p>Recreational activities would generate \$2 million in gross receipts.</p> <p>Livestock grazing elimination due to land exchanges and administrative actions would result in the loss of about \$150,000 in gross livestock receipts and \$27,000 in grazing fees.</p>

CHAPTER 1

CHAPTER 1 PURPOSE AND NEED

PURPOSE AND NEED

The Mimbres Resource Management Plan (RMP) has been prepared to provide a comprehensive framework for managing public land and for allocating resources during the next 20 years using the principles of multiple use and sustained yield. These two principles are defined in the Glossary. The RMP establishes areas for limited, restricted, or exclusive uses, levels of production, allowable resource uses, resource condition objectives, program uses, program constraints, and general management direction.

This document includes proposed RMP alternatives and a Draft Environmental Impact Statement (EIS), which fulfill the Federal Land Policy and Management Act (FLPMA) and the National Environmental Policy Act (NEPA) requirements for comprehensive land-use planning for public land. The requirement (by Executive Order 11644) that public land be designated as "open", "limited", or "closed" to off-road vehicle use will also be met. Plan amendments, if necessary, will keep the RMP current with resource management needs and policies.

Between 1976 and 1982, the Mimbres Resource Area prepared land-use plans, known as Management Framework Plans (MFP), for the majority of the public surface and minerals within its area of jurisdiction. Valid planning decisions found in the Gila and Southern Rio Grande MFPs and various amendments are available for review in the Mimbres Resource Area Office.

LOCATION AND DESCRIPTION OF THE PLANNING AREA

The Mimbres Resource Area is located in the southwest portion of New Mexico and contains approximately 3,053,820 acres of public land and 4,126,780 acres of Federal minerals (see Map 1-1). The public land is located in Dona Ana, Luna Grant, and Hidalgo Counties. Generally, the public land is well-blocked in Dona Ana County, southern Luna County and portions of Hidalgo County. Private and State trust lands are

concentrated in much of Grant County, southern Hidalgo County and northern Luna County.

PLANNING PROCESS

The BLM RMP process consists of nine basic steps. This process requires the use of an interdisciplinary team of resource specialists for the completion of each step. The steps described in the planning regulations and followed in preparing this RMP are summarized below. Publication of this document is part of Step 7, selection of the preferred alternative.

Step 1. Identification of Issues

The first step in the planning process is intended to identify resource management problems or conflicts that can be resolved through the planning process. These problems or conflicts (issues) were identified by the BLM and other agency personnel as well as members of the public. Four issues and nine management concerns were identified and considered in this document. Each are discussed in detail.

Step 2. Development of Planning Criteria

During this step preliminary decisions are made regarding the kinds of information needed to clarify the issues, the kinds of alternatives to be developed, and the factors to be considered in evaluating alternatives and selecting a preferred RMP/EIS. As each issue was identified, a list of planning criteria was developed to help guide the resolution of that issue. The planning criteria are listed after each issue.

Step 3. Inventory Data and Information Collection

This step involves the collection of various kinds of environmental, social, economic resource, and institutional data needed for completion of the process. This step can include detailed field studies, literature studies, or consultation with appropriate professionals. In most cases, this

process is limited to inventories needed to address the issues.

Step 4. Management Situation Analysis (MSA)

The step calls for deliberate assessment of the current situation. It includes a description of current BLM management guidance, a discussion of existing problems and opportunities for solving them, and a consolidation of existing data needed to analyze and resolve the identified issues. The end result of this step is the development of an unpublished companion document known as the MSA. That document is used to develop the Continuing Management Guidance and actions section of the RMP. The MSA is used as a basis for compiling the Affected Environment chapter of the RMP. Copies of the MSA are available for review in the Mimbres Resource Area Office.

Step 5. Formulation of Alternatives

During this step several complete, reasonable resource management alternatives are prepared, including one for no action and others that strive to resolve the issues while placing emphasis either on environmental protection or resource production. This important section of the RMP has been incorporated into Chapter 2.

Step 6. Estimation of Effects of Alternatives

The physical, biological, economic, and social effects of implementing each alternative are estimated in order to allow for a comparative evaluation of impacts. This step, known as the Environmental Consequences section, is Chapter 4 in this RMP.

Step 7. Selection of the Preferred Alternative

Based on the information generated during Step 6, the District Manager identifies and recommends a preferred alternative to the State Director. The Draft RMP/EIS document is then prepared and distributed for public review. BLM is presently at this step in the planning process. Alternative D has been selected by management as the preferred alternative.

Step 8. Selection of the Resource Management Plan

Based on the results of public review and comment, the District Manager will select and recommend to the State Director various proposals or alternatives to comprise the proposed RMP and publish it along with a Final EIS. A final decision is made after a 60-day Governor's Consistency Review and a 30-day protest period on the Final EIS are completed. A Record of Decision (ROD) and Approved RMP will then be published.

Step 9. Monitoring and Evaluation

This step involves the collection and analysis of long-term resource condition and trend data to determine the effectiveness of the plan in resolving the identified issues, and to ensure that implementation of the plan is achieving the desired results. Monitoring continues from the time the RMP is adopted until changing conditions require a revision of the whole plan or any portion of it.

PLANNING ISSUES, CRITERIA, AND MANAGEMENT CONCERNS

The BLM planning regulations equate land-use planning with problem solving and issue resolution. An issue is defined as an opportunity, conflict, or problem, regarding the use or management of public land and resources.

Planning criteria are the standards, rules, and measures used for data collection and alternative formulation, which will guide final plan selection. Planning criteria are taken from appropriate laws and regulations, BLM manuals and directives, and concerns expressed in meetings, and consultations, both with the public and other agencies.

Management concerns are those nonissue related procedures or land-use allocations which have proven, during the preparation of this RMP/EIS, to need modification. Management concerns focus on use conflicts, requirements, or conditions that cannot be resolved administratively and did not, during initial public scoping appear to meet the criteria to qualify as a planning issue but were identified for resolution in the Mimbres RMP.

Issue 1: Land Ownership Adjustments

Needed Decisions

To resolve this issue, answers are needed to the following questions:

- Which lands should BLM acquire (by exchange, purchase, or donation) to consolidate its land pattern and to enhance multiple-use programs?
- Which lands should BLM retain in public ownership?
- Which lands should BLM dispose of and why?

Planning Criteria

To develop answers for the needed questions identified above, BLM will consider:

- Multiple-use values (whether or not significant or unique values exist)
- Land and resource management efficiency
- Service to the public (i.e., meeting community needs, etc.)

- Public interest and attitudes
- Existing land uses
- Surrounding land ownership pattern
- Adjacent land uses
- Need for public and administrative access
- FLPMA, Section 203 sale criteria
 - parcels difficult and uneconomic to manage
 - purpose of a previous acquisition is no longer required
 - disposal of a parcel will serve important public purposes
- Social and economic effects
- Effects on other resources and uses
- The degree to which changes in ownership will promote consolidation of public land without creating a scattered land pattern or split-estate
- Public health and safety

Issue 2: Areas of Critical Environmental Concern (ACECs) and Other Special

Needed Decisions

To resolve this issue, answers are needed to the following questions:

- Which public land should be designated as biological, cultural, scenic or natural hazard ACECs and how should they be managed (the RMP must clearly identify management objectives for each area and what restrictions if any apply to other uses)?

- Is the Gila River (BLM-administered public land in the Gila Lower Box between Redrock and Virden, New Mexico and the Gila Middle Box upstream from Redrock, New Mexico) suitable for inclusion in the National Wild and Scenic River System? How should these areas be managed?
- Which routes should be considered as possible locations for the Continental Divide National Scenic Trail? Which route should be ultimately designated?

- Is land in the Peloncillo Mountains (between the Coronado National Forest and Antelope Pass) suitable for inclusion in the National Wilderness Preservation System?
- Is land in the Organ Mountains (between Soledad Canyon and Peña Blanca and between the Organ Mountains Wilderness Study Area (WSA) and Squaw Peak) suitable for inclusion in the National Wilderness Preservation System?
- Is land in the Apache Box area suitable for inclusion in the National Wilderness Preservation System?
- Which public land should be identified for other forms of special management (such as scenic or backcountry byways, watchable wildlife areas, and "Adventures in the Past") and how should it be managed?

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

- Resource values
- Manageability of an area to preserve its resource value

- Existing ACEC, wilderness, and wild and scenic river representation
- Current and potential land uses
- Effects of designation on other resources and uses
- Effects of non-designation on resource values
- Social and economic effects
- Public interest and attitudes
- Consistency of designation with resource plans of other Federal, State, and local governments and the Indian tribes
- Consultation with Federal, State and local agencies, the scientific community, and individuals
- Long-term (more than 20 years) versus short-term (less than 20 years) benefits
- Management concerns along the U.S./Mexican border
- Public health and safety

Issue 3: Vehicle Management

Needed Decisions

To resolve this issue, answers are needed to the following questions:

- What public land should be designated as open, limited, or closed to vehicle use?
- What areas should be managed for intensive off-road vehicle (ORV) use?
- Within restricted areas, how should vehicle use for authorized activities (other than recreational) be accommodated?

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

- Level of existing use and location of areas currently being used by ORVs
- Demand for additional ORV opportunities
- Types of ORVs being used
- Effects of ORVs use on other resources and uses

- Effects of ORV restrictions or closures on other resources
- Effects of ORV designations on other uses such as livestock management, law enforcement, and mineral exploration and development
- BLM administrative needs
- Public interest and attitudes
- Manageability of an area to accomplish the objectives of a designation
- Management concerns along the U.S./Mexican border
- Public health and safety
- Social and economic effects

Issue 4: Access

Needed Decisions

To resolve this issue, answers are needed to the following questions:

- Where should BLM provide access to or across public land and what type of access is needed?
- What actions should BLM take to provide access to or across public land?
- How should BLM coordinate with other land and resource management agencies to ensure access to State trust, National Forest, and public lands?

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

- Extent of public land and the size of public land parcels
- Resource values
- Availability and type of existing access

- Public needs and preferences for access
- Agency administrative needs for access
- Coordination with State and local governments and other Federal agencies
- Effects of the availability of access on existing resources and uses
- Compatibility with adjoining land uses
- How the public land is being used and managed
- Management concerns along the U.S./Mexico border
- Public health and safety
- Social and economic effects
- Effects on adjacent private landowners
- Potential for development of access through consolidation of public land or development of alternative routes, followed by negotiated easement acquisition, and as a last resort, condemnation

Management Concern 1: Rights-of-Way

Needed Decisions

To resolve this management concern, answers are needed to the following questions:

- Which public land should be designated for rights-of-way corridors, avoidance areas, and exclusion areas?
- What terms and conditions should be applied to rights-of-way grants for corridors and sites and for use outside corridors and sites?
- Which existing public land transportation and utility corridors should not be designated as a rights-of-way corridor upon plan approval?
- Service to the public
- Resource values and uses
- Adjacent land uses
- Compatibility with other utility rights-of-way
- Presence of existing corridors and rights-of-way (and confining new rights-of-ways to existing corridors and sites to the extent possible)
- Social and economic effects
- Effects on the resources and uses

Planning Criteria

To develop answers for the needed questions identified above, BLM will consider:

Management Concern 2: Minerals

Needed Decisions

To resolve this management concern, answers are needed to the following questions:

- Which public land should be open to the operation of the mining laws? Which should be closed?
- What terms or conditions should be applied to public land open to the operation of the mining laws?
- Which public land should be open to mineral material (sand and gravel, for instance) disposal? Which should be closed?
- What terms, conditions, or special stipulations should be applied to public land open to mineral material disposal activities?
- Which public land should be considered for competitive mineral material sales?
- Which public land should be open to energy and nonenergy leasable mineral development subject to the terms and conditions of the standard lease form, minor constraints such as seasonal restrictions, or major constraints such as no surface occupancy?

- Which public land should be closed to energy and nonenergy mineral leasing?

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

- Effects of mineral exploration and development on other resources and uses
- Mineral potential and the probability of a discovery
- Demand for mineral resources

- Lands available for mineral production
- Effects of environmental protection stipulations on claimants, lessees, and permittees
- Success of protective stipulations in accomplishing objectives
- Effects on the mineral industry of closing lands
- Public health and safety
- Social and economic effects

Management Concern 3: Recreation

Needed Decisions

- Which public land should be managed with emphasis on outdoor recreation opportunities?
- What recreation setting should be maintained and what activities should BLM provide for?
- What recreation management strategies should be developed and what actions should BLM take to maintain established recreation settings?
- What activity planning priorities should BLM establish for the Resource Area?
- Which public land should be identified and managed for interpretation of natural and cultural resources and public education (such as backcountry byways, watchable wildlife areas)?

- Existing recreation uses, use areas, and facilities
- Public demand for additional recreation activities, settings, and experiences
- Compatibility with adjacent land uses and resources
- Effects of recreation uses on other resources and uses
- Public health and safety
- Planned or projected recreation developments
- Public interest and attitudes
- Potential for interpretation of resource management objectives
- Social and economic effects

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

Management Concern 4: Cultural and Paleontological Resources

Needed Decisions

To resolve this management concern, answers are needed to the following questions:

- What management objectives should BLM establish for cultural and paleontological resources in the Resource Area?
- What actions should BLM take to achieve these objectives (such as preparation and implementation of cultural resource management plans and designation of ACECs or other SMAs)?

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

- Relative importance and sensitivity of known and anticipated cultural and paleontological resources

- Geographic distribution and density of cultural and paleontological resources
- Feasibility of attaining cultural and paleontological resource management objectives
- Need or desirability of cultural and paleontological resource management objectives
- Threats to cultural and paleontological resources
- Public interest and attitudes
- Effects of cultural and paleontological resource management on other resources and uses
- Compatibility with adjacent land uses
- Social and economic effects

Management Concern 5: Wildlife Habitat

Needed Decisions

To resolve this management concern, answers are needed to the following questions:

- What wildlife species and habitats should receive management priority? What maintenance, improvement, and expansion objectives should BLM establish for these species and habitats?
- Which priority areas need Habitat Management Plans (HMPs)?
- What actions should BLM take to achieve the objectives for priority species and habitats?

- What wildlife population goals should be established, considering existing and anticipated habitat capacity?
- What monitoring objectives should BLM establish for priority habitat?
- Where, with what methods, and at what times of the year should animal damage (predator) control activities be authorized?

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

- Existing HMPs

- Input from Federal and State wildlife agencies and the scientific community
- Species and habitats of high public or scientific interest
- Extent of species and habitats including current range, key areas, and potential habitat
- Species population goals
- Forage allocation
- Species habitat requirements
- Vegetation communities and habitat condition
- Effects of other resource uses
- Social and economic effects
- Presence of exotic species and conflicts between exotic and native species
- Maintenance or enhancement of biological diversity

Management Concern 6: Soil, Air and Water

Needed Decisions

To resolve this management concern, answers are needed to the following questions:

- What objectives should BLM establish for watershed management and control of soil erosion?
- What management objectives should BLM establish for maintenance of air quality in the Resource Area?
- What actions should BLM take to achieve these objectives (such as preparation and implementation of watershed management plans)?
- What water quality objectives should BLM establish for the Resource Area and what actions should be taken to achieve those objectives?
- Where should BLM focus its efforts to secure instream flows for riparian, wildlife, and recreation purposes (if such a provision over exists under New Mexico State law)?
- Soil type
- Effectiveness of existing erosion control structures and the need for additional structures
- Extent of saline/alkali soils
- Watershed condition in areas of saline/alkali soils
- Methods to reduce runoff and erosion
- Current and potential land uses
- Air quality standards of the Clean Air Act (as amended, 1977)
- Air quality standards of the State of New Mexico
- Current and future land uses that may affect air quality
- Values and uses of water resources
- Demand for additional use of water resources

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

- Water quality and trend
- Watershed condition and trend
- Watershed productivity potential

- Manageability of the water resources
- Other resource uses of water resources
- State of New Mexico and Federal water quality standards
- Social and economic effects

Management Concern 7: Vegetation

Needed Decisions

To resolve this management concern, answers are needed to the following questions:

- On which public land should BLM establish vegetation sale areas for native plants and firewood?
- What vegetation management objectives should BLM develop for maintenance or re-establishment of desired plant communities and what actions should be taken to achieve those objectives?
- On which public land should land treatments (vegetation manipulation) be used to protect, restore, establish, or enhance vegetation species? What types of treatments should BLM use (root plow, herbicides, prescribed fire)?
- Social and economic effects
- Areas that require increased vegetation cover to reduce soil erosion, increase livestock forage, and improve wildlife habitat
- Suitability of natural vs. artificial revegetation techniques
- Use of land treatments to maintain or improve plant communities
- Current and potential land uses
- Presence of special status plants
- Input from the scientific community
- Potential for location of vegetation sale areas in land disposal areas and mineral material sale areas

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

- Available access and demand
- Effects on other resources
- Condition and trend of native plant communities
- Maintenance or enhancement of biological diversity
- Presence of exotic species and conflicts between exotic species and native species

Management Concern 8: Riparian and Arroyo Habitats

Needed Decisions

To resolve this management concern, answers are needed to the following questions:

- Which riparian and arroyo habitat areas should be designated as ACECs or receive other special management designations?
- What management prescriptions are needed to protect or restore riparian and arroyo

habitat areas in the Mimbres Resource Area?

- Where should BLM focus its efforts to secure instream flows for maintenance of riparian habitat (should this become a possibility)?

Planning Criteria

- Condition and trend of riparian vegetation
- Condition and trend of arroyo habitat vegetation

- Resource values
- Current and potential land uses
- Effects on other resources and uses
- Social and economic effects
- Potential for improvement
- Watershed condition and trend

Management Concern 9: Special Status Species

Needed Decisions

To resolve this management concern, answers are needed to the following questions:

- What management objectives should BLM establish for protection and enhancement of plant or animal special status species?
- What actions should BLM take to improve habitat conditions, aid in recovery efforts, and resolve resource conflicts for listed, proposed and candidate special status species?

Planning Criteria

To develop answers for the needed decisions identified above, BLM will consider:

- Input from Federal and State wildlife agencies and the scientific community
- Extent of species habitat, including current range, key areas, and potential habitat
- Species population goals and habitat requirements
- Effects of other resource uses
- Social and economic effects
- Conflicts with other uses
- Recovery plan goals and objectives and the potential to aid in recovery efforts

CHAPTER 2

CHAPTER 2 PLAN ALTERNATIVES

INTRODUCTION

This chapter contains two sections, "Continuing Management Guidance and Actions" and "The Alternatives." Continuing Management Guidance and Actions is a summary of how the Mimbres Resource Area is presently being managed and applies to all alternatives. The Alternative Section is a description of the possible solutions to issue questions and management concerns. Each alternative presents a different blend and balance of resource allocations and uses. They are based on input from the Resource Management Plan (RMP) interdisciplinary team, other Bureau of Land Management (BLM) staff, and interested citizens. The public land, resources, and programs not affected by the resolution of the issues in these alternatives will be managed as outlined in the Continuing Management and Actions section.

All four alternatives comply with the Federal Land Policy and Management Act (FLPMA) requirement that the public land be managed for multiple use and sustained yield. Together with the Continuing Management Guidance and Actions, each

of the alternatives forms a separate and feasible land-use plan. Table S-1, located in the Summary at the beginning of this document, summarizes the components of each alternative. Table S-2 summarizes the impacts by alternative.

The alternatives in this RMP/Environmental Impact Statement (EIS) are designed to provide general management guidance. Specific projects for a given area or resource will be detailed as necessary in activity plans with accompanying environmental analyses. These activity plans will discuss more precisely how a particular area or resource will be managed, and will comply with the approved RMP's resolution of the issues and management concerns. To the extent possible, every attempt will be made to make as many decisions as possible at the RMP stage that can be immediately implemented without a subsequent activity plan. Where there are overlapping proposed activity plans, every effort will be made to prepare Coordinated Resource Management Plans rather than separate activity plans.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

Appendix H-1 describes six areas that were considered for proposal as areas of critical environmental concern (ACECs)

but were subsequently dropped for the reasons specified.

CONTINUING MANAGEMENT GUIDANCE AND ACTIONS

This section describes the resource management guidance and actions that will continue to affect the Mimbres Resource Area regardless of which RMP alternative is selected. It is based on detailed discussions of the "Existing Management Situation" section of the Management Situation Analysis (MSA), a companion document to the RMP/EIS.

Management guidance for resource programs include laws, Executive Orders, regulations, Department of the Interior manuals, BLM manuals and instruction memoranda [Washington, New Mexico State Office (NMSO), and

Las Cruces District Office]. Continuing management actions are an estimate of resource program activities that will continue regardless of the alternative. Valid planning decisions found in the Gila and Southern Rio Grande Management Framework Plans (MFPs) and various amendments are available for review in the Mimbres Resource Area Office. Together, these form the basis for the Continuing Management Guidance and Actions for public land resources and programs in the Mimbres Resource Area. Table 2-1 displays the type, number, and size of continuing actions per year for the 20-year life of the RMP.

TABLE 2-1
ESTIMATED SURFACE DISTURBING ACTIONS PER YEAR

TYPE OF ACTION	AVERAGE NO. OF ACTIONS	SIZE OF ACTION (ACRES)
Oil & Gas Exploration Wells	0.3	2
Oil & Gas Access Roads	0.3	3
Geothermal Exploration Wells	0.3	1
Geothermal Access Roads	0.3	3
Mining Notices	20	1.5
Mining Plans of Operation	1.3	5.8
Mineral Material Sales	166	0.5
Fencing	4	0.6
Pipelines	4	5
Troughs	4	0.1
Storage Tanks	1	0.1
Wells	1	1
Prescribed Burning	1	2
Leases-2920	0.25	20
Permits-2920	2	5
R&PPs	4	20
Linear ROWs	40	15
Site ROWs	10	5
Vegetative Products Removal	500	0.0001
Water Spreaders	0.25	0.1
Wire Checks	2	0.1
Wildfires	5	25
Spring Developments	1	0.1
Umbrella Catchments	1	0.1
Exclosures	1	0.25

Source: BLM Files, 1990.

MINERALS

The policy of the BLM is to make mineral resources available in accordance with the objectives of the Mining and Minerals Policy Act of 1970 and the National Materials and Minerals Policy Research and Development Act of 1980. These acts require the Federal Government to facilitate the development of mineral resources to meet National, regional, and local needs for domestic and defensive purposes. The BLM is also responsible for ensuring that mineral development is carried out in a manner which minimizes environmental damage and provides for the rehabilitation of affected land. The BLM official policy appears in Appendix A-1. Most of the public land in the Mimbres Resource Area is available for mineral entry, except where restricted by withdrawals for military, flood control, conservation, or other specific purposes. Unless otherwise specified, all acreage figures in this section refer to Federal mineral estate managed by the BLM.

Leasables

Most phases of exploration, development, and production operations require National Environmental Policy Act (NEPA) review before authorization. Exceptions are oil and gas geophysical work. Pre-lease geophysical exploration (including the drilling of geothermal temperature-gradient holes and oil and gas seismic operations) is authorized by a permit or conducted under a Notice of Intent. However, all other operations including exploratory drilling and extraction and production of oil, gas, and geothermal resources requires a lease.

Exploration usually begins with geophysical prospecting. In oil and gas exploration, the primary geophysical methods utilize seismic data. One method involves the use of vibrator trucks which drop heavy metal plates on the ground. The resulting impact generates seismic waves that are recorded and analyzed. Another method uses underground explosions to generate the seismic waves. Shallow holes are drilled, loaded with charges, and then detonated. This "shot hole" technique yields seismic data similar to that of the vibrator method. These kinds of geophysical exploration methods are conducted along existing roads and trails.

Electrical resistivity and temperature-gradient surveys are geophysical techniques that are commonly used in geothermal exploration. The electrical resistivity survey involves transmitting an electric current through electrodes that are placed in the ground. These surveys are usually conducted along existing roads and trails.

Temperature-gradient surveys require the drilling of shallow holes that are usually less than 500 feet in depth. The holes are drilled with truck-mounted drill rigs adjacent to existing roads and trails. The drill site usually requires no clearing or levelling and covers an area of about 25 feet by 25 feet.

If data from geophysical prospecting are favorable, "target" areas are delineated and a site is selected for drilling a "wildcat" well. An access road is usually built to haul in the heavy equipment needed for the drilling operations. Roads are typically 16 feet wide with a 50 foot right-of-way width. To drill a typical oil and gas or geothermal well, an area of 2 acres is cleared and leveled for placement of the drilling rig and associated equipment and structures. If the wildcat well results in a "dry hole" the well is plugged and abandoned. If the well shows resource potential, more wells are drilled. The result may be a producing oil and gas field. For geothermal operations, if the well produces adequate hot water or steam, more wells may be drilled for electrical power generation. For direct-use applications, one well may be all that is needed.

Surface disturbance increases during the development and production stages of oil and gas operations. More wells are drilled, production equipment is installed, and access roads and facility sites are built. The situation is similar for development and production of a geothermal field for electrical power generation. However, geothermal development and production of low-temperature, direct-use facilities is not nearly as extensive. Domestic water heating, space heating, and greenhouse production may only utilize one or two wells. The hot water can only be transported for several miles before losing so much heat that utilization becomes uneconomic. Consequently, most direct-use geothermal production operations are located at or very near the well site.

After an oil or gas reservoir is depleted, wells are plugged and all equipment and structures are removed. All roads, well sites, and other disturbed areas are then rehabilitated using the Resource Area's Reclamation and Reseeding Guidelines for guidance. Abandonment of geothermal operations would be the same. However, if the water source is never depleted, a geothermal reservoir could produce hot water indefinitely.

CURRENT LEASE STATUS

Table 2-2 shows the total number of leases and lease acreage by county within the Resource Area as of June 1990.

Exploration History

The Resource Area is relatively unexplored for oil and gas. Geophysical exploration increased significantly between 1978 and 1983. About 94 exploration permits were issued during this period. Most of the exploration involved hundreds of miles of seismic lines using vibrator trucks. During the 5-year period from 1985 through 1989, nine exploration permits were issued and two wildcat wells were drilled.

To date, about 80 wildcat wells have been drilled in the Resource Area (New Mexico Bureau of Mines and Mineral Resources 1990). Seven of the wells had shows of oil or gas. All of the shows were on private land. Twenty-three of these wells were drilled on Federal mineral estate and were all dry holes. Table 2-3 lists all of the wildcat wells by County that have been drilled in the Resource Area.

Geothermal exploration in the Resource Area was extensive in the late 1970's and early 1980's. Exploration began with geologic reconnaissance and progressed through various types of geophysical exploration to the drilling of temperature-gradient holes. As target areas were delineated, test wells were drilled. To date, there are 12 wells in the Resource Area that are either currently producing hot water or are capable of production. These wells are all located on Federal geothermal leases.

15-YEAR DEVELOPMENT PROJECTIONS

Oil and Gas

Current impact analysis policy regarding "reasonably foreseeable development" of fluid mineral resources requires that a minimum discovery must be assumed in "frontier" areas for the purpose of impact analysis. Therefore, the assumption is made that a minimum discovery would be made in the Resource Area within the next 15 years.

In the next 15 years, there would be a 4 or 5-year period of increased exploration activity. This would be similar to the late 1970's and early 1980's when there was an increase in geophysical exploration in the Resource Area. During the next 15 years, 30 geophysical exploration permits will be approved and five wildcat wells would be drilled. This exploration would result in one discovery well.

Surface disturbance associated with the geophysical exploration permits would be minimal because it is Resource Area policy to require that seismic exploration be conducted along existing roads and trails. Each wildcat well would involve 2 acres of disturbance. Five access roads would be built for each of the wildcat wells. Each access road would be 16 feet wide by 1.5 miles long resulting in 3 acres of disturbance per road.

One of the five wildcat wells would result in a discovery. There would be a 5-acre area of disturbance associated with this producing well for the placement of associated production equipment. Production from this well would last for about 10 years beyond the 20-year life of this Plan. Table 2-4 summarizes projected oil and gas development over the next 15 years.

Geothermal

It is expected that production of geothermal resources for direct-use purposes would gradually increase over the next 15 years. The Las Cruces area is actively being promoted by the State of New Mexico, New Mexico State University (NMSU), and the City of Las Cruces as an ideal

TABLE 2-2
OIL AND GAS AND GEOTHERMAL LEASES

	OIL AND GAS		GEOTHERMAL	
	No. Leases	Acres	No. Leases	Acres
Dona Ana	19	54,451	9	13,126
Grant	11	12,065	0	0
Hidalgo	29	41,980	1	2,501
Luna	<u>13</u>	<u>17,485</u>	<u>0</u>	<u>0</u>
TOTALS	72*	125,981	10	15,627

Source: BLM Files, 1990.

Note: * Actual lease total is 70 because there are two leases that overlap the Hidalgo/Luna County line.

TABLE 2-3
OIL AND GAS WILDCAT WELLS BY COUNTY

COUNTY	NO OF WELLS	NO OF SHOWS	WELLS ON FEDERAL MINERAL ESTATE
Dona Ana	18	3	10
Grant	8	0	1
Hidalgo	30	2	7
Luna	<u>24</u>	<u>2</u>	<u>5</u>
TOTAL	80	7	23

Source: BLM Files, 1990.

TABLE 2-4
15-YEAR PROJECTION FOR OIL AND GAS DEVELOPMENT

TYPE OF ACTIVITY	NO. OF ACTIONS	AREA DISTURBED	TOTAL ACRES DISTURBED
Geophysical Permits	30	Existing roads and trails	
Drilling	5	Drill pads 2 ac/pad	10
Access Roads	5	16' x 1.5 mi. 3 ac/road	15
Production	1	5 ac/site	<u>5</u>
TOTAL ACRES DISTURBED = 30			

Source: BLM Files, 1990.

location for greenhouses. Among the attractions are known geothermal resources at Las Cruces and Radium Springs, the proximity to Interstate Highways 10 and 25, and a rapidly growing city.

There are currently three commercial greenhouses in the Resource Area: two in the Animas Valley and one at Radium Springs. The greenhouses in the Animas Valley are utilizing Federal geothermal resources and the greenhouse at Radium Springs is on private land. NMSU operates a geothermally heated greenhouse on private land which is used for research purposes.

It is expected that geothermal exploration would continue on a small scale in the Resource Area and that production operations would increase. Over the next 15 years, 10 temperature-gradient holes would be drilled. These drill sites would be located adjacent to existing roads. Each site

would disturb an area 25 feet by 25 feet. Ten other various kinds of geophysical exploration permits (gravity, electrical resistivity, and radon for instance) would be approved. Most of these activities would be conducted along existing roads and trails and would involve minimal surface disturbance.

Four test wells would be drilled. Each test well would disturb an area of 1 acre and require an access road 1.5 miles long by 16 feet wide. All four test wells would be capable of production. There will be three commercial greenhouse facilities utilizing three of the four production wells. Each facility would require an area of 10 acres for development. Waste water would either be reinjected or pumped into evaporation pits. Table 2-5 summarizes geothermal development over the next 15 years.

TABLE 2-5
15-YEAR PROJECTION FOR GEOTHERMAL DEVELOPMENT

TYPE OF ACTIVITY	NO. OF ACTIONS	AREA DISTURBED	TOTAL ACRES DISTURBED
Geophysical Permits	10	Existing roads	Minimal and trails
Temperature-Gradient Holes	10	Drill pads 0.01 ac/pad	0.10
Test Wells	4	Drill pads 1 ac/ site	4
Access Roads	4	16' x 1.5 mi 3 ac/ road	12
Production	3	10 ac/site	30
TOTAL ACRES DISTURBED =			46.1

Source: BLM Files, 1990.

NONENERGY LEASABLE MINERALS

Currently, there are no potassium or sodium leases within the Resource Area. There are no existing lease stipulations that affect areas having potential for the occurrence of nonenergy leasable minerals.

Exploration for potassium and sodium require prospecting permits. The development and production of potassium and sodium requires a lease. In 1981, two potassium prospecting permits were issued to Earth Sciences, Inc. for exploration of alunite in the Steeple Rock area. No work was ever done on these permits. In 1985, three sodium prospecting permits were issued to the Ozark-Mahoning Company for exploration in the playas west of Lordsburg. The company drilled only one hole and did not perform any other exploration. There has been no other exploration for nonenergy leasable minerals in the Resource Area. Although there may be some exploration for potassium or sodium within the next 15 years, no development or production is anticipated.

Locatables

The Mining Law of 1872 allows for the location of mining claims on public land for the purpose of exploration, development, and production of minerals. Locatable commodities include metallic minerals such as gold, silver, lead, zinc, and copper and nonmetallic minerals such as barite and fluorspar.

Before commencing any surface-disturbing mining activities, an operator is required to submit either a "notice" that describes the proposed activities or a more comprehensive "plan of operation" to the BLM. A notice is required for disturbing 5 acres or less or for driving off-road in an area designated as limited to existing roads and trails. A plan of operation is required for disturbing more than 5 acres or for operating within Wilderness Study Areas (WSAs), ACECs, or areas designated as closed to off-road vehicle use.

The BLM must prepare an environmental assessment (EA) for a plan of operations. An EA is not required for a notice and the BLM has no authority to approve notices. However, it is standard practice in the Mimbres Resource Area to review all notices for National Environmental Policy Act (NEPA) compliance and to advise the operator of any special environmental concerns

and reclamation practices. Operators are not required to provide reclamation bonds for notices unless they have established a record of noncompliance. Reclamation bonds are mandatory for plans of operation.

OVERVIEW OF OPERATIONS

Exploration activities are common in the Resource Area. Occasionally, there are small-scale development and production operations. Exploration operations that involve minimal or no surface disturbance include various types of geophysical surveys. The most common types of surface-disturbing exploration activities in the Resource Area are trenching and drilling. Trenches are dug with a backhoe and are typically 10 to 50 feet long, 4 feet wide, and 4 to 6 feet deep. Drilling operations are conducted with a truck-mounted rig. Normally, drill sites do not have to be cleared or leveled but there is surface disturbance resulting from the drilling operation and associated vehicle movement. The area disturbed is typically 50 feet by 50 feet. The depths of the holes are usually less than 1,000 feet. There are so many old mining roads in the Resource Area that, in many cases, new access roads for exploration are not needed. When roads are needed they are typically about 0.25 miles long and about 12 feet wide. These kinds of roads do not require a built-up surface.

In addition to the actual mine site, development and production operations usually require areas to be cleared and leveled for various kinds of equipment and buildings. Five to ten acres are usually needed for small mining operations. Access roads are built to accommodate heavy truck traffic and are commonly 16 feet wide.

15-YEAR DEVELOPMENT PROJECTION

Exploration, rather than development and production, will continue to be the primary locatable mineral activity in the Resource Area. Assuming that mineral commodity prices remain at or near present rates, it is expected that exploration activities will continue at current levels over the next 15 years. It is anticipated that the Resource Area will receive 300 notices, 5 plans of operation in WSAs, and 15 plans of operation for areas greater than 5 acres. Projected development and associated surface disturbance are shown in Table 2-6.

TABLE 2-6
15-YEAR PROJECTION FOR LOCATABLE MINERALS DEVELOPMENT

TYPE OF ACTIVITY	NO. OF ACTIONS	AREA DISTURBED	TOTAL ACRES DISTURBED
<u>NOTICES</u>	300		
Geophysical Surveys	75	Existing roads	Minimal
Trenches/Open Cuts	500	0.003 ac/site	1.5
Drill Sites	150	0.05 ac/site	7.5
Access Roads	10 mi	1.45 ac/mile	<u>14.5</u>
		SUBTOTAL	23.5
<u>PLANS (WSAs)</u>	5		
Drill Sites	10	0.5 ac/site	<u>5.0</u>
		SUBTOTAL	5.0
<u>PLANS (>5 acres)</u>	15		
Trenches/Open Cuts	150	0.003 ac/site	0.45
Drill Sites	120	0.05 ac/site	6
Access roads	25 mi	1.45 ac/mi	36
Production Sites (mine/mill)	4	10 ac/site	<u>40</u>
		SUBTOTAL	<u>82.45</u>
		TOTAL ACRES DISTURBED	110.95

Source: BLM Files, 1990.

Salables

Salable minerals include materials such as sand, gravel, clay, caliche, stone, and volcanic cinders. These "mineral materials" must be purchased from the BLM. Most materials are sold by the cubic yard. Stone is usually sold by the ton. Some organizations and government agencies qualify for "free use" and are not charged for extracting mineral materials from public land.

Most applications for mineral material sales and free use must go through the NEPA review process. The exceptions are sales and free use from community pits and common use areas. These sites have already been evaluated through NEPA review and have been designated suitable for extraction of mineral materials. Permits for community pits and common-use areas are sold "over the counter" and do not require individual EAs. Sales from community pits and common use areas will continue (except for Community Pit No. 1 under Alternative B). See Table 2-7.

15-YEAR DEVELOPMENT PROJECTION

The need for mineral materials will be greatest in Dona Ana County. Most of the expected 200 or more sales and free use permits per year will be in this area. The Las Cruces-El Paso area is a rapidly growing portion of the "sunbelt" and is expected to grow at a much higher rate than many other parts of the country. Mineral materials will be used in support of this growth. The primary materials produced will be sand and gravel because they are needed for the production of concrete and asphaltic paving mixtures.

There will be an increasing demand for gravel and rock that meets specifications for use as an aggregate in concrete and asphaltic mixtures. Sand and gravel operators in the Las Cruces area say that high-quality gravel which meets these specifications is being rapidly depleted from existing sources. This is complicated by the fact that potential extraction of new sources of sand and gravel on the Las Cruces East Mesa is being physically inhibited by urban growth. There are also concerns about the degradation of air quality due to dust emissions from sand and gravel operations. Consequently, more distant sources of sand and gravel will eventually be mined. Also, operators will probably be producing aggregate from rock sources that may be 15 to 30 miles from Las Cruces.

There will be a continuing demand for stone from Community Pit No. 1. An average of 110 permits will be issued annually for stone (except under Alternative B).

LANDS

It is BLM policy to make public land and its resources available for use and development to meet National, regional, and local needs, consistent with National objectives. The Mimbres Resource Area has an active lands and realty program as a result of intense local and regional demands. See Appendix B-1 for Lands and Minerals Disposal Policy.

FLPMA (Public Law 94-579) provides authority for land ownership adjustments by sale, exchange, withdrawal and other means. The Act further requires that adjustments be in conformance with existing land-use plans.

Specific items to be examined while considering the merits of any disposal or acquisition action include:

1. Consistency and conformance with current planning.
2. Mineral resources.
3. Special status species plants or animals and their habitat.
4. Recreation and wilderness values.
5. Prime and unique farmlands.
6. Floodplain/flood hazard evaluation.
7. Cultural and paleontological resource values.
8. Native American religious values.
9. Visual resources.
10. Areas of Critical Environmental Concern.
11. Wetlands and riparian areas.
12. Existing rights and uses.
13. Controversy.
14. Health and Safety.
15. Adjacent uses and ownership.
16. Air resources.
17. Public interest.
18. Relative values.
19. Willingness to sell or exchange on part of the landowner.

There are currently 14 Memorandums of Understanding and Cooperative Agreements in the Resource Area that address the lands program. These are listed on Appendix B-3.

TABLE 2-8
WITHDRAWALS

NUMBER	DATE	PURPOSE AND SURFACE MANAGER	ACRES ^{a/}
<u>DONA ANA COUNTY</u>			
Proclamation 2137	May 27, 1907	Protection of US/Mexico Border (Unknown)	998
PLO 883 & PLO 1186	May 21, 1952 July 14, 1955	White Sands Missile Range (COE/DOD)	506,540
PLO 2051	February 17, 1960	For Research Purposes (NMSU)	827
PLO 3685	June 10, 1965	For Research Facilities to Benefit NMSU (Antenna and Telecom "A" Mountain)(NASA)	2,789
PLO 3462	November 23, 1964	For Water Supplies and Facilities to Benefit NASA/WSMR and Access Road (COE)	1,382
PLO 663 & EO 8649 & EO 8780 & EO 9115 & PLO 78 & PLO 1866	August 28, 1950 January 23, 1941 June 11, 1941 March 28, 1942 January 15, 1943 June 11, 1941	Rio Grande Canalization Project (IBWC)	0.27 64 42 623 160 120
EO 8646	January 11, 1941	San Andres Wildlife Refuge (USF&W)	57,215
EO 1526 & EO 2368 & EO 4266	May 3, 1912 April 24, 1916 July 20, 1925	Jornada Experimental Station and Range (USDA)	176,899 28,813 7,957
PLO 4263	August 11, 1967	Animal Science Ranch (NMSU)	52,000
PLO 4038	June 6, 1966	Ecology Plots & Demonstration Area (BLM)	40
SO*	November 16, 1926	Rio Grande Project (BOR)	98
EO*	October 17, 1903	Rio Grande Reservoir Site (BOR)	50
<u>LUNA COUNTY</u>			
PLO 4038	June 6, 1966	Ecology Plots & Demonstration Area (BLM)	40
EO 7442 & EO 5255	August 31, 1936 December 31, 1929	Rifle Range (NM National Guard)	2,080
PLO 60	November 13, 1942	Landing Field (NM National Guard)	200
SO*	November 22, 1894	Public Spring Ft. Cummings (USDI)	320
SO 238	July 17, 1947	Air Navigation Site (Civil Aeronautics Admin., Dept. of Commerce)	40
PWR #107 (SO Intp. 250)	February 16, 1939	Public Water Reserves (USDI)	560

TABLE 2-8 (Concluded)
WITHDRAWALS

NUMBER	DATE	PURPOSE AND SURFACE MANAGER	ACRES ^{a/}
<u>HIDALGO COUNTY</u>			
PLO 4146	July 14, 1906	Protection of Mexican Duck (BLM)	190
PLO 4038 & PLO 4208	June 6, 1966 April 24, 1967	Ecological Plots & Demonstration Area (BLM)	40
PWR #107 (SO Intp. 250)	February 16, 1939	Public Water Reserves (USDI)	360
PWR #107 (SO Intp. 253)	August 19, 1940	Public Water Reserves (USDI)	40
<u>GRANT COUNTY</u>			
EO 477	July 14, 1906	Fort Bayard (COE/DOD)	860
EO 637	May 23, 1907	Fort Bayard Water Supply (COE/DOD)	13,622
EO 5889 & EO 551 & EO 759 & EO 83 & WPD #1	July 16, 1932 No Date November 24, 1924 July 2, 1910 August 7, 1916	San Carlos Indian Irrigation (San Carlos Indian Reservation) and Powersites on Gila River (FERC)	35,908
PWR #107 (SO Intp. 250)	February 16, 1939	Public Water Reserve (USDI)	40
PWR #107 (SO Intp. 256)	August 22, 1939	Public Water Reserves (USDI)	240

Source: BLM Files (State Office and District Office), 1990.

Notes: a/ Acres have been rounded off.

b/ 104,221 acres of the Jornada withdrawal is within the WSMR withdrawal boundary.

PLO = Public Land Order

SO = Secretarial Order

EO = Executive Order

PWR = Public Water Reserves

WPD = Water Power Designation

*Some secretarial and executive orders issued in early 1900's and before were identified only by date, no number was assigned.

classifications segregated the land against entry under certain public land laws. Small areas with highly unique resource values were sometimes further segregated against entry under the mining laws or the mineral leasing laws.

All classifications and classification terminations will be reviewed as part of this planning effort (see Issue 2, ACECs and Other SMAs). This document deals with the questions of disposal and the segregations needed to accomplish these objectives. It also recommends the placement of further segregations against the mining laws or mineral leasing laws where they are needed to protect unique and valuable resources.

Table 2-9 shows existing classifications in the Mimbres Resource Area. The Dona Ana Recreation Area and Granite Gap Recreation Area classifications will be terminated upon completion of this Plan. Others will remain in effect until replaced by a productive withdrawal or terminated upon completion of this Plan, depending on the alternative that is selected.

TABLE 2-9
EXISTING CLASSIFICATIONS IN THE
MIMBRES RESOURCE AREA

NAME	ACREAGE
Massacre Peak	240
Dona Ana Recreation Area	2,826
Granite Gap Recreation Area	960
Guadalupe Canyon	3,169
Organ Mountains Recreation Area	2,930
Baylor Recreation Area	838
Needle's Eye Picnic Site	960
Ft. Cummings Recreation Site	6,000

Source: BLM Files, 1990.

Desert Land Entries and Indian Allotments

During assessments for the Classification and Multiple Use Act, no lands were found suitable for desert land entries or Indian allotments. Therefore, no proposals for these appropriations will be considered.

Recreation and Public Purposes (R&PPs)

The R&PP Act provides guidelines and procedures for transfer of certain public land to States or their political subdivisions, and to nonprofit corporations and associations to meet their needs for public land required for historical, recreational and public purposes. Under the R&PP Act, BLM has the authority to lease or patent public land to governmental and nonprofit entities for public parks and building sites at less than fair market value. Applications for use of public land under the R&PP Act are processed as a Mimbres Resource Area priority. Such applications are processed under the requirements of NEPA and are subject to public review. R&PP applications for lands outside disposal areas that meet the criteria outlined in 43 CFR 2740 and are consistent with management objectives in this plan will be considered.

The BLM leases these public purpose areas to qualified applicants for \$0.25 per acre per year or patents them for \$2.50 per acre under the Special Pricing Program or at a 50 percent reduction for cemeteries and churches or a 10 percent reduction if use will be restricted to members of a particular limited group, such as fraternal and religious groups. These sale prices are determined in accordance with 43 USC 869-1(a) and (c). Leases or conveyances for recreational or historic monument purposes are issued without monetary consideration.

In the Mimbres Resource Area, 15 R&PP patents have been issued.

Currently, there are 31 authorized R&PP leases in the Mimbres Resource Area, totaling approximately 1,995 acres. Of these leases, 20 are for landfills which cover 17 sites. Previously 25 leases had been issued for landfills, however, the Goat Mountain (NM 42181), Silver City (NM 6762) and Luna County (NM 16869) landfills were terminated for nonuse and La Union and North Virden were replaced by new leases. Of the remaining 20, the Butterfield (NM 0559218), Chaparral (NM 11484), Salem-Garfield (NM 57123), Hatch (NM 16685), La Union (NM 31533), Mesilla Dam (NM 0253955), and Rincon

(NM 9850) landfills have been closed to use by the public and are waiting final reclamation and development of closure policy before the leases are terminated.

The following leases accept solid waste at transfer stations: Anthony (NM 51351, NM 16686), Hill (NM 0253957), La Mesa (NM 030526), Garfield (NM 13178), and Salem (NM 0253956). This garbage is hauled to the City of Las Cruces landfill where it is placed in trenches.

The City of Las Cruces landfill (NM 14, NM 18155) is the only remaining landfill on public land which continues to place solid waste in trenches.

The only designated disposal area for liquid waste in Dona Ana County is the Mesquite landfill (NM 22012) located in the southern portion of the county. Dona Ana County and the City of Las Cruces are conducting studies to select a location for a regional landfill. These studies will also designate a boundary for the region. The region can include more than one city and one county. Any public land that may be used for this regional landfill must meet disposal criteria and be considered suitable for use as a landfill.

Because of changes being made to the current R&PP regulations, no additional leases for landfills will be issued. Sales of public land for landfill purposes would not be accomplished under the new R&PP Act until the R&PP regulations are finalized. Sales of public land for landfill purposes could be accomplished under the public sale authority.

The total authorizations in Dona Ana County account for approximately 50 percent of the total R&PP leases/patents in the Las Cruces District 8-county area of jurisdiction. Since 1982, the receipt of R&PP lease applications has increased due to a greater public awareness of public land uses in Dona Ana County. The Mimbres Resource Area receives an average of four R&PP applications per year. Ninety-five percent of these requests are for locations within Dona Ana County.

Rights-of-Way, Leases, and Permits

The Mimbres Resource Area grants rights-of-way (ROWs), leases and permits to qualified individuals, businesses, and governmental entities for the use of public land. New ROWs are issued simultaneously with existing ROWs whenever possible to promote joint use. All ROW actions are coordinated, to the fullest extent possible, with Federal, State, and local government agencies, adjacent landowners, and interested individuals and groups.

All ROW applications are analyzed site-specifically on a case-by-case basis. There are no programmatic EAs for the lands program. Each case is reviewed by an interdisciplinary team. All ROW activities are subject to site-specific environmental analysis. Natural and cultural values are protected or avoided. Mitigation measures are incorporated within the authorizations to minimize the adverse effects of any surface disturbing activity. Project construction areas are rehabilitated by various reseeding and soil erosion control methods using the Resource Area's Reclamation and Reseeding Guidelines for guidance.

All roads will be constructed or maintained in accordance with the BLM New Mexico Road Policy.

The Mimbres Resource Area processes an average of 50 ROWs per year, 90 percent within Dona Ana County.

Due to the densely populated Mesilla Valley and the City of Las Cruces, there are numerous pipelines, transmission and distribution powerlines, and highway ROWs in Dona Ana County. The larger ROWs are confined to well-established corridors. These corridors also extend west to Deming and Lordsburg. Applicants are encouraged to use existing corridors whenever possible. These existing corridors do not have a designated width. Prohibiting factors for width would be other resource conflicts, terrain, and land status. Most lands actions in the Resource Area are compatible, and overlapping ROWs are

issued whenever possible. Numerous smaller ROWs (such as roads to private residences) are issued annually in addition to the larger ones mentioned above to accommodate public needs within the Resource Area.

There are currently 49 grants issued for communication sites in the Mimbres Resource Area. Many of these ROW holders are authorized to sublease to other users. Site plans are being developed for the sites. The Resource Area's terrain offers a prime area for development of communication sites. The sites most in demand include the Little Floridas, Goat Mountain (Twin Peaks), Robledo Mountain, Victorio Mountain, "A" Mountain, and San Augustine Pass. Because of public demand for communication sites in the San Augustine Pass, the US Department of Army is concerned that frequencies, if not monitored properly, could conflict with their defense testing. In a meeting with the Mimbres Resource Area Manager and White Sands Missile Range (WSMR) personnel, it was agreed BLM will no longer address communication sites in the San Augustine Pass area so long as WSMR is willing to consider communication site applications for that area. Should WSMR cease considering applications from private parties, the BLM will resume management of the area in accordance with provisions of this Plan. All public inquiries will be transferred to WSMR for consideration. The "A" Mountain site is another management concern. NASA and NMSU want the site to remain closed to future applications because they are concerned further development at the site would interfere with NASA's mission and research being conducted at NMSU.

There are currently three 43 Code of Federal Regulations (CFR) 2920 permit authorizations in the Resource Area. The two in Dona Ana County include one for a hot mix plant to process bituminous pavement mix and the other is an apiary site. An apiary site permit is also authorized in Luna County near the Florida Mountains WSA. Approximately three permits for movies filmed in the Resource Area are processed each year.

It is assumed that management will continue to authorize these routine realty actions throughout the 20-year life of this RMP. These actions are

likely to occur on a continuing basis no matter which alternative is ultimately selected and include the granting of routine ROWs, leases, permits, and R&PPs.

Set Asides

Certain parcels of public land, within the boundaries of the Elena Gallegos Exchange, were set aside (reserved) by Memoranda of Understanding with the City of Las Cruces and the Las Cruces School District No. 2 for future development under the R&PP Act. Certain parcels were also set aside within the 10,000-acre State Land Exchange Area for existing and potential R&PP leases. The legal descriptions of these areas are contained in Appendix B-3.

Hazardous Materials

The potential for the existence of hazardous materials at landfills (including septage pits and illegal dump sites) is a major concern in the Resource Area. Some landfills were improperly constructed and others were built without regard for geologic and hydrologic conditions. The primary concern is that hazardous substances could be leaking from the landfills and entering the groundwater.

To date, over 20 sites have been investigated (of which 9 are landfills) according to Environmental Protection Agency guidelines for the presence of hazardous materials and potential contamination of the environment. Most of these sites were proven to contain insignificant amounts of hazardous materials and pose no threat to the public health or the environment. The Resource Area continues to study any site where evidence indicates hazardous materials may be present.

There are 17 landfill sites on public land in the Resource Area. Of the 17 sites, 15 are in Dona Ana County and two are in Hidalgo County. Currently, all except the Las Cruces landfill are physically closed to land-filling of solid waste although the leases are still current. Instead of land-filling, Dona Ana County has placed containerized transfer stations at the various landfill sites in the County. The Mesquite site in Dona Ana County is the only site that accepts septage. Waste is transferred from these stations

to the Las Cruces landfill. Landfills are listed in Table 2-10.

Landfills (or any other site) will be investigated if suspected of containing hazardous materials or posing a potential threat to public safety. As unauthorized sites are found they will be cleaned up. After an initial environmental audit of a site, a Preliminary Assessment (PA) may be performed. If the results from the PA indicate that hazardous materials may be present or may have migrated off-site, further study can be recommended through a Site Investigation (SI) or a more comprehensive Expanded Site Investigation (ESI). Table 2-10 shows the status of landfill investigations as of February 1991. All surface and mineral use authorizations are suspended pending the outcome of the studies.

ACCESS

The Mimbres Resource Area has a relatively inactive easement acquisition program, as normally only one or two easements are acquired each year. As required by BLM policy, these easements generally provide legal access to BLM-initiated rangeland improvement projects and recreation opportunities.

On a case-by-case basis, easements are acquired to establish legal access where only physical access exists or resource conflicts are occurring. The method of determining needed access is in accordance with the Transportation Planning Process, BLM Road Inventory System, and the RMP. This entire process is funded by the benefitting resource program(s), such as recreation, range, and wildlife.

All roads will be constructed or maintained in accordance with the BLM New Mexico Road Policy.

LIVESTOCK GRAZING

Livestock grazing in the Resource Area is authorized under the Taylor Grazing Act of 1934, FLPMA of 1976, and the Public Rangelands Improvement Act (PRIA) of 1978. BLM is directed to authorize and manage livestock grazing on public land under the principles of multiple

use and sustained yield and to prevent the degradation of the rangeland resources by providing for their orderly use, improvement, and development.

The Endangered Species Act of 1973, the Wild Free-Roaming Horse and Burro Act of 1971, the Archaeological Resource Protection Act of 1971, and NEPA of 1969 can affect livestock grazing activities by requiring additional resource management actions. Through the NEPA process, Federal agencies assess the impacts of their programs and actions on the human environment. BLM was charged by the Natural Resources Defense Council (NRDC) in 1973 with noncompliance of the Act. Court litigation resulted in 212 site-specific Environmental Impact Statements (EISs) being required by the BLM addressing livestock grazing on public land. The two EISs encompassing the Mimbres Resource Area are the Southern Rio Grande EIS (BLM 1981) and the Las Cruces/Lordsburg Management Framework Plan Amendment/EIS (BLM 1984). These two EISs provide further program guidance through the proposed actions and management objectives identified. Approximately 20 allotments located in New Mexico are administered by the Safford District (located in Safford, Arizona). These allotments were covered by the Upper Gila-San Simon Grazing EIS (1978).

Grazing Management Policy

BLM's Final Grazing Management Policy established in 1982 now incorporated in BLM handbooks identified goals and objectives consistent with BLM's responsibility to improve the rangelands and manage the grazing use on public land in compliance with laws and policies affecting its grazing management program. The intent of the policy is to make the grazing management program more efficient and cost effective by use of a selective management approach. This is being accomplished by assigning management priorities among allotments or groups of allotments within a planning area based on similar resource characteristics, management needs, and both resource and economic potential for improvement. Selective management categories can be changed as additional resource data become available.

TABLE 2-10
LANDFILL INVESTIGATION STATUS

LANDFILL NAME	STATUS	LISTED ON CERCLIS OR FEDERAL FACILITY DOCKET
Anthony	SI completed	CERCLIS
Butterfield Park	PA scheduled	No
Chaparral	PA completed	Docket
Garfield	Not scheduled	No
Hatch	PA completed	Docket
Hill	PA completed	Docket
La Mesa	PA completed	CERCLIS
La Union	ESI completed	CERCLIS
Las Cruces	SI completed	Docket
Mesquite	PA completed	CERCLIS
Mesilla Dam	ESI completed	CERCLIS
Old La Union*	PA scheduled	No
Rincon	Not scheduled	No
Salem	Not scheduled	No
Salem-Garfield	Not scheduled	No
Virden North	PA scheduled	No
Virden South	Not scheduled	No

Source: BLM Files, 1991.

Note: *This site has been formally closed by the BLM.

SI = Site Investigation

PA = Preliminary Assessment

ESI = Expanded Site Investigation

CERCLIS = Comprehensive Environmental Response Compensation Inventory System

The three basic management categories specified in the Policy are:

- Category M - those allotments with current satisfactory condition;
- Category I - those allotments where existing conditions are unsatisfactory and can economically be improved; and
- Category C - those allotments where the opportunity for positive economic return on public investment is unlikely.

A copy of the grazing management policy can be found at the Mimbres Resource Area Office. All allotments within the Mimbres Resource Area have been categorized according to the criteria contained in the grazing management policy. The present allotment categorization, including a summary of each allotment in the Mimbres Resource Area, is displayed in Appendix C-2.

SOUTHERN RIO GRANDE GRAZING EIS

There are 74 grazing allotments within the Southern Rio Grande EIS area. All of these but one are within the grazing district boundary. All of Dona Ana County and the eastern edge of Luna County are included in this EIS area. In the Rangeland Program Summary (RPS) of January 1983, allotments in this EIS area were categorized and decisions issued, placing these allotments into one of the three management categories. Category I allotments were given a high, medium, and low priority rating depending on the resource conflicts, utilization patterns, and needed rangeland improvements. Initially there were 49 Category I, 12 Category M, and 13 Category C allotments. As of the preparation of this document, there are now 33 Category I, 21 Category M, and 20 Category C allotments (see Appendix C-2). Allotments have changed category due to changing priorities, resolution or identification of resource conflicts, changing utilizations patterns, and implementation of activity plans which have incorporated needed rangeland improvements. Of the Category I allotments, 19 have completed the initial 5-year monitoring period and are now in the activity plan development stage.

Under the Proposed Action Alternative in the SRG EIS, 16 wells (with pump or windmill), 7 storage tanks, 58 drinking troughs, 85.5 miles of pipeline, 7 dirt tanks, 161 miles of fence, 7 cattleguards, 9 dikes, 3,960 acres of creosotebush brush control and 21,238 acres of mesquite brush control were identified. According to the RPS updates issued each year, a total of 2 wells (with pump or windmill), 5 storage tanks, 14 drinking troughs, 40.5 miles of pipeline, and 70.6 miles of fence have been constructed, and 4,853 acres of creosotebush treated. These projects were completed with 8100 funding, where BLM and the permittee share the cost or under a Section 4 permit, where the permittee pays for the entire project.

There are six Allotment Management Plans (AMPs) in existence in this EIS area. One of these plans has been evaluated and will be revised. Two others are being intensively monitored to determine how the plan should be revised. Several new activity plans are in the initial stages of development. Most Category I allotments will have an activity plan developed on the allotment during or upon the completion of the monitoring studies.

Since the completion of the Southern Rio Grande EIS, all Category I allotments have been monitored or are being monitored at this time. The Category M and C allotments, although less intensively monitored, have had some form of use supervision done on them either in the way of rangeland improvement inspections, livestock counts, or utilization monitoring. Of the 19 I category allotments with 5 years of monitoring completed, 8 are in the activity planning stage and have received or soon will receive the needed rangeland improvements to implement the grazing systems. Permittees on 11 allotments have accepted adjustments or remained at their preference numbers and an activity plan is not proposed at this time. Improvement in range condition on the monitored allotments appears to be related more to the above average rainfall but rotational grazing has also had a major effect along with reduction in active livestock use in the late 1970's and early 1980's. Species composition has remained the same over the 9 years that studies have been conducted. The brush control

areas have shown the greatest improvement in range condition.

In the Afton Allotment (No. 03056), a series of small exclosures (100 acres maximum total) will be constructed to provide ungrazed research sites.

LAS CRUCES/LORDSBURG MFP AMENDMENT/EIS (MFPA/EIS)

There are 273 grazing allotments within the Las Cruces/Lordsburg MFPA/EIS area. Of this total, 133 are within the grazing district boundary and the remaining 140 are outside this boundary. All of Grant and Hidalgo counties and the western three quarters of Luna County are included in this EIS area. There is also a small portion of Cochise County in Arizona which is administered for grazing in the Mimbres Resource Area. Allotments in this EIS area were categorized and decisions issued, placing these allotments into one of three management categories.

Category I allotments were given a high, medium and low priority rating depending on the resource conflicts, utilization patterns, and needed rangeland improvements. Initially, there were 92 Category I, 164 Category M, and 17 Category C allotments. As of the preparation of this document, there are now 84 Category I, 170 Category M, and 19 Category C allotments (see Appendix C-2). Allotments have changed category due to changing priorities, resolution or identification of resource conflicts, changing utilization patterns, and implementation of activity plans which have incorporated needed rangeland improvements. Of the Category I allotments, 16 have completed the initial 5-year monitoring period and are now in the activity plan development stage.

Under the Proposed Action Alternative in the Las Cruces/Lordsburg MFPA/EIS, 11 wells (with pump or windmill), 17 storage tanks, 47 drinking troughs, 67 miles of pipeline, 25 dirt tanks, 55 miles of fence, 1 cattleguard, 68 erosion dikes, 4 umbrella catchments, 42,279 acres of creosotebush brush control and 9,609 acres of mesquite brush control were identified. According to the RPS updates issued each year, a total of 3 wells (with pump or windmill), 16 storage tanks, 25 drinking troughs, 74.4 miles of pipeline, and 155.6 miles of

fence have been constructed and 5,491 acres of creosotebush have been treated with an additional 320 acres treated through prescribed burns. These projects were completed with 8100 funding, where BLM and the permittee share the cost or under a Section 4 permit, where the permittee pays for the entire project.

There are 15 AMPs in existence in this EIS area. One of these plans has been evaluated and revised. Two others are being intensively monitored to determine how the plan should be revised. Several new activity plans are in the initial stages of development. Category I allotments will have activity plans developed on the allotment as monitoring studies are completed.

Since the completion of the Las Cruces/Lordsburg MFPA/EIS, all Category I allotments have been monitored, are being monitored, or are on the schedule to be initiated in the next 5 years. The Category M or C allotments, although less intensively monitored, have had some form of use supervision done on them either in the way of rangeland improvement inspections, livestock counts, or utilization monitoring. Of the I category allotments, 16 with 5 years of monitoring completed, 13 are in the activity planning stage and have received or soon will receive the needed rangeland improvements to implement the grazing systems. Permittees on three allotments have accepted adjustments or remained at their preference numbers and an activity plan is not proposed at this time. Improvement in range condition on the monitored allotments appears to be related more to the above average rainfall but rotational grazing has had a major effect along with reductions in active livestock use in the late 1970's and early 1980's. Species composition has remained the same over the 7 years that the studies have been conducted. The brush control areas have shown the greatest improvement in range condition.

Livestock Grazing Management

The objective of the Mimbres Resource Area rangeland management program is to manage the rangelands in an efficient manner by providing effective management to those allotments where it is needed most to maintain, improve, and monitor range conditions. This can be

accomplished through careful planning, giving attention to proper placement of rangeland improvements, distribution of salt, distribution of livestock, kind and class of livestock, suitable grazing systems, plant and animal requirements, and vegetation land treatments.

ALLOTMENT MANAGEMENT PLANS/ACTIVITY PLANS

AMPs and activity plans will continue to be developed for allotments to resolve resource problems or conflicts. Specific management actions will be developed at the activity plan stage. These plans will be prepared in consultation, cooperation, and coordination with the permittees and other interested parties. The priorities for completing AMPs and activity plans will coincide with the allotment categorization process; for example, Category I allotments will be first priority, followed by Category "M" and "C" allotments.

GRAZING SYSTEMS

These plans will normally include a grazing system which will provide periodic rest from livestock grazing. The type of system to be implemented will be tailored to meet the needs of the allotment and will be developed through consultation with the livestock operator and other affected interests. Consideration will be given to permittee needs, level of management, vegetation objectives, the degree and type of resource conflicts, initial costs to implement the system, such as fences and waters, and other factors. A variety of grazing systems are available for consideration. Some of these are rest-rotation, deferred, deferred-rotation, rotation grazing, and high intensity/short duration (HRM).

It is anticipated that five new activity plans will be developed and implemented each year upon the completion of the monitoring studies on the I category allotments. Allotments with Special Management Area or riparian zone, would receive a higher priority due to the possible resource conflicts.

RANGELAND IMPROVEMENTS

PRIA outlines the BLM's goal for investing in economically and environmentally sound rangeland improvements to improve public land for multiple use purposes. A copy of the policy is located in the Mimbres Resource Area Office.

A benefit/cost analysis will be used to help set improvement priorities on all new rangeland improvements. Rangeland improvements and vegetation land treatments will continue to be implemented to improve or maintain forage production and range condition. Project implementation and the cost of these actions were based on several assumptions:

- Manpower and funding availability.
- Demand for products (i.e., beef) will continue to grow.
- Objectives will be reached within 20 years of plan implementation.
- Actual implementation of the proposed developments may vary from those described at the planning stage.

During the preparation of the AMPs and activity plans, proposed developments will be further refined to reflect changes in allotment management and needs, along with the ever changing legislation, mandates, and policy.

LIVESTOCK USE ADJUSTMENTS

On an allotment, adjustments can be made by changing one or more of the following: the kind and class of livestock, the season of use, the number of livestock, or the pattern of grazing use. Any such adjustment is made only after the appropriate consultation, cooperation, and coordination with lessees, permittees, other landowners, District Grazing Advisory Board, and other affected interests as required by laws, regulations, and policy. Long-term increases in vegetation will be reserved for wildlife, watershed, and livestock on a case-by-case basis.

Permittees may apply for and be granted nonuse for definite periods of time based upon the following criteria: conservation and protection of the public land, annual fluctuations of livestock operations, financial or other reasons beyond the control of the operator, livestock disease or quarantine. Such nonuse must be in accordance with the goals of the RMP, benefit or protect sensitive resource values (such as within an ACEC), and approved by the Authorized Officer. Other applications for livestock use will not be considered while the nonuse is in effect.

MONITORING STUDIES

The monitoring of rangeland resources involves collection of data on the present grazing management system, the effectiveness of existing rangeland improvements, and present stocking rate, taking into consideration current precipitation data, livestock use patterns, watershed and wildlife habitat needs, and condition and trend. The studies help identify livestock distribution problems, needed rangeland improvements, vegetation land treatments, initial stocking rates, and possible grazing management systems tailored for the particular allotment and its needs. The rangeland monitoring studies collect data on actual livestock use, utilization of key forage species, precipitation, and used in the Mimbres Resource Area to monitor long-term rangeland ecological condition and trend.

Monitoring studies have been or will be established on most of the Category I allotments in the Mimbres Resource Area. The intensity and frequency of the monitoring depends on the allotment category. Category I allotments are monitored at a greater intensity than Category M and C allotments. Any necessary adjustments in stocking levels or other management practices will be based on these studies and consultation with the permittee and other interested parties. Grazing use will continue to be authorized at the existing levels until monitoring studies indicate a change is necessary.

VEGETATION

Timbered or woodland areas are extremely limited in the Mimbres Resource Area. Vegetation sales for fuel wood or fenceposts will continue to be

handled on a case-by-case basis. Generally, there will be no fuelwood sales except to accomplish other resource management objectives such as mesquite eradication. Vegetation products for landscaping and decorative purposes are a major demand in the Resource Area.

Prickly pear, sotol, ocotillo, desert willow, little-leaf sumac, range ratany, soaptree yucca, and Spanish dagger are some of the plants sold for non-commercial purposes in the Resource Area. There are no commercial sale areas. Plant collecting is illegal anywhere without a permit. Illegal plant collecting is a recurring problem throughout the Resource Area.

Currently, there are five vegetation sale areas encompassing approximately 22,000 acres in Dona Ana County. Most of this acreage is in the soaptree yucca sale area. As the demand continues to grow, new areas will be identified. It is estimated that not more than two new sale areas per year would be opened and these would not entail more than 100 acres each. The sotol sale area will need to be moved periodically. The use of sotol in religious ceremonies requires the removal of the center of the plant which kills it. Prior to surface disturbing activities, such as sand and gravel operations, plants would be made available to the public and commercial operators. The Adopt-A-Plant program is in its initial stage of development. Under this program, plants made available as a result of surface disturbing actions will be "adopted" into private homes. Removal of vegetation products would involve some plant digging and some off-road vehicle travel.

SOIL, AIR, AND WATER

Soils

The BLM has cooperated with the USDA Soil Conservation Service in the National Cooperative Soil Survey Program. Participation in the National Cooperative Soil Survey Program will continue. Updating of the soil surveys and soil interpretive data will be used in planning, support, and implementation of resource activities.

Emphasis is placed on prevention of deterioration or degradation as well as conservation of the soil

resource. Some protection is provided by the Conservation Reserve Program. All lands in soil capability classes II through VIII are not suitable for desert land entry petition application or agricultural leases. This program seeks to remove highly erodible lands from marginal agricultural operations.

Air

Reduction of air quality impacts from activities on public land is accomplished by mitigation measures developed on a case-by-case basis through NEPA or other statutory or regulatory processes. Each impact is evaluated to see if it is allowable and acceptable. Activities such as road construction and sand or gravel extraction will have appropriate measures developed to mitigate impacts to air quality (such as dust abatement). These measures will be made a part of the permit or contract.

The BLM is required to comply with the New Mexico State Implementation Plan on air quality as well as meet responsibilities under the Clean Air Act, as amended, and FLPMA.

Water Resources

Policy and guidance for the management of water resources associated with land administered by the BLM is summarized in various BLM manual sections. A brief description of the different authorities for the program is also presented. General program emphasis is on water rights and watershed management specifically related to water quality and sediment yields.

WATER RIGHTS

A water use and water rights inventory has been completed in the Mimbres Resource Area to identify the status of the BLM's water rights filings. There are no ongoing adjudications in the Resource Area.

All water rights are acquired in accordance with State substantive and procedural law except where Congress or the Executive Branch has created a Federal reservation of a water right.

Federal reserved water rights are defined in legislation and Executive Orders. BLM's Federal reserved water rights claims are primarily associated with the withdrawal established by the Executive Order of April 17, 1926 which concerns public water reserves.

WATER QUALITY

Water quality regulation in the United States receives its basic authority from three laws. The Federal Water Pollution Control Act of 1972 and the Clean Water Act of 1977 as amended are the basic authorities for instream water quality standards and maximum permissible pollutant discharges. The Safe Drinking Water Act of 1974 is the basic authority for domestic water quality standards.

A growing concern is nonpoint source pollution. The New Mexico Water Quality Control Commission recently identified the main stem of the Rio Grande from Dona Ana south as having high amounts of pathogens, while the Mimbres River from Mimbres to San Juan and the Gila River from Davis Creek to the State line are impaired from extensive siltation, nutrients, and temperature. The BLM will continue to participate with the State and Environmental Protection Agency (EPA) in water quality management to ensure that management practices comply with State water quality standards.

The Colorado River Salinity Control Act passed in 1974 directed the Secretary of the Interior to undertake research and development of salinity control projects and to develop methods to improve water quality. An amendment to the Act passed in 1984 specifically requires the BLM to develop a comprehensive program for minimizing salt contributions to the Colorado River from BLM-administered public land.

WATERSHED ACTIVITY PLANS

Control of soil erosion, sediment movement, and salt contamination of surface water remains a high priority management goal. Nonpoint source impaired watersheds and areas with critical to

severe erosion (1.0 to greater than 3.0 acre ft/mi²/yr) sediment yields, which produce runoff having more than 1,000 milligrams per liter (mg/l) dissolved salts, will be of major focus. Salinity control will be a priority on saline soils within the Colorado River drainage.

Continuing efforts to control erosion will include the following: minimizing surface disturbance from construction projects, closure and rehabilitation of unneeded roads, and control of off-road vehicle use in critical areas.

The soil and water programs will continue to emphasize legislative mandates of protection, as they relate to surface and groundwater quality, as well as provide support to other resource activities in the Mimbres Resource Area.

Project level planning will consider the sensitivity of the watershed (soil, water, and vegetation) resource in the affected area on a site-specific basis. All surface disturbing actions will require appropriate reclamation measures using the Resource Area's Reclamation and Reseeding Guidelines as guidance. All rangeland improvements and land treatments will be designed to minimize adverse impacts to the watershed resource. Project construction areas will be reseeded with a mixture of grasses, forbs, and shrubs as necessary. These projects consist of contour furrowing and pitting, mechanical treatments, and the construction of detention dams, diversions, water spreader, wire checks, and exclosures.

FIRE MANAGEMENT

The number and size of fires varies from year-to-year, depending on the occurrence of lightning storms and the amount of fine fuels build-up. Between 1977 and 1989, there were 63 fires on land administered by the Mimbres Resource Area. During those years, annual ignitions ranged from a low of 0 in 1986 to 10 ignitions in 1989. During this period, 46 of the fires were caused by lightning with sizes ranging from 1 acre to 3,000 acres. There were 17 man caused fires. Fuels consumed were primarily grass, pinyon/juniper, mixed brush, and creosotebush. For more details on fuel types, refer to the maps and fuel models in the District Fire Management Activity Plan.

The current Mimbres Resource Area policy is to initial attack all wildfires on or threatening public land. Suppression strategies mainly focus on minimizing cost not the acreage burned. In high sensitivity areas such as the Organ Mountains or where significant property values exist, suppression strategies may be geared towards minimizing burned acreage while protecting important resource values.

Prescribed burning is another management tool that the Resource Area has only recently begun to utilize. It is estimated that one to two prescribed burns would be conducted each year totalling several hundred to several thousand acres. These would be mainly in alkali sacaton, tobosa, or mountain shrub vegetation types.

WILDLIFE

Legislation such as FLPMA, the Sikes Act, the Endangered Species Act of 1973, as amended in 1982, and the PRIA, as amended, has directed the BLM to improve management of wildlife habitat to meet wildlife needs. PRIA outlines the BLM's goal for investing in economically and environmentally sound rangeland improvements to improve public land for multiple use purposes. The Wildlife 2000 initiative places added emphasis on expanding and creating a more effective wildlife program Bureauwide. New Mexico Fish and Wildlife 2000 and the New Mexico Operations Plan for wildlife are companion policy guides. This often conflicts with increasing demands for basic energy supplies, building materials, and food products. It is the responsibility of the Mimbres Resource Area to identify opportunities to maintain, improve, and expand wildlife habitat on the public land for both consumptive and non-consumptive uses as well as biological diversity. The RMP process also involves identification of wildlife habitats deserving special attention. Furthermore, it is USDI policy that Interior agency fish and wildlife management strategies assist State agencies in implementing fish and wildlife resource plans.

All actions in the Mimbres Resource Area are reviewed by the Resource Area EA Review Team and given site-specific analysis during the EA process to determine whether the action will affect wetland or riparian areas. Also considered are

impacts to resident species' habitat, habitat improvement projects, and compatibility with the New Mexico Department of Game and Fish (NMDGF) and BLM Comprehensive Wildlife Plan. All rangeland and watershed improvements will continue to be designed to achieve both range and wildlife objectives. This includes location and design of waters and vegetation manipulation projects. Fences are designed to minimize resistance to wildlife movement.

Animal Damage Control

Animal damage control activities on public land in the Mimbres Resource Area are guided by USDI policy and the annual Animal Damage Control Plan for the Las Cruces District, prepared jointly by the USDA and the BLM. The USDA has the responsibility for the program and supervises all control activities. The BLM approves all specific control actions on public land.

Habitat Management

Habitat management plans (HMPs) and portions of Coordinated Resource Management Plans are developed in an effort to improve wildlife habitat. Implementation and maintenance of existing HMPs (Florida Mountains, Big Hatchet/Alamo Hueco Mountains, Peloncillo Mountains, San Simon Cienega, Gila Lower Box, and Franklin Mountains) and Coordinated Resource Management Plans (Gila Lower Box and Organ Mountains) will continue utilizing appropriated funds as well as funds to be derived from the soon to be expanded Sikes Act Stamp Program. Existing HMPs are on file and available for review at the Mimbres Resource Area Office.

Monitoring of wildlife habitat by key species utilization will continue to be conducted as part of HMP and rangeland program monitoring. The information obtained from the vegetation transects will be incorporated into final grazing decisions where appropriate.

CRUCIAL WILDLIFE AREAS

The six HMPs and two Coordinated Resource Management Plans in the Resource Area were

developed for the management of various species or unique habitat types.

Big Hatchet/Alamo Hueco HMP

This HMP was developed in 1983 for the management of desert bighorn sheep (State-listed endangered species) habitat in the Big Hatchet Mountains, Little Hatchet Mountains, and the Alamo Hueco Mountains of southwest Hidalgo County. The primary objective of this Plan is to provide and manage habitat for a herd size of 750 animals.

Peloncillo Mountain HMP

This HMP was developed in 1984 for the management of desert bighorn sheep habitat. The HMP area is in western Hidalgo County and runs from I-10 in the north to the Coronado National Forest to the south. The primary objective of the HMP is to ensure habitat for 400 desert bighorn sheep by the year 2010.

Florida Mountain HMP

The Plan was developed in 1979 and revised in 1988 for the management of Iranian ibex which were released into the Florida Mountains by the NMDGF in 1970. The Florida Mountains are located in southeast Luna County. The primary objective of the HMP is to manage the habitat for a ibex herd of 400 animals (post hunt), while maintaining adequate habitat for mule deer and other wildlife (except under Alternative B).

Franklin Mountain HMP

This HMP was developed in 1987 for the management of Sneed's pincushion cactus habitat. The HMP area is in the Franklin Mountains of southeastern Dona Ana County. The primary objective of the HMP is to manage the habitat to have at least three secure populations with a target population of 10,000 individuals in these three populations.

San Simon Cienega HMP

The Plan was developed in 1973 for the protection and enhancement of critical habitat for the Mexican duck. The HMP was revised in 1983 to

enhance habitat for waterfowl and other wildlife species. A Coordinated Management Plan is currently being developed which will address livestock grazing, rangeland improvements, and wildlife habitat enhancement projects.

Organ Mountains Coordinated Resource Management Plan

The Organ Mountains Coordinated Resource Management Plan was developed in 1989 and includes portions which deal with wildlife and wildlife habitat. The primary objectives for wildlife consist of developing or protecting springs and riparian habitat, installation of wildlife waters, and possible introduction of desert bighorn sheep and turkeys.

Gila Lower Gila Coordinated Resource Management Plan

The Coordinated Resource Management Plan was developed in 1985 to enhance and protect the

riparian resources of the Gila Lower Box. The Gila Lower Box is located in northern Hidalgo County and stretches approximately 8 miles. Along with protecting riparian values, the Coordinated Resource Management Plan also protects habitat for the diverse avian, mammalian, and reptilian species which occur in the Gila Lower Box.

Wildlife Management Actions

Wildlife management actions such as spring developments, exclosures, and game waters involve less than 1 acre of surface disturbance per year. The vegetation/land treatment actions for wildlife habitat improvement are included in the total estimate for vegetation land treatments.

Prior to authorizing activities in crucial wildlife habitats such as winter ranges, raptor nest sites, and fawning habitat, considerations are made to avoid or minimize disturbance to wildlife. The area and time stipulations are shown in Table 2-11.

TABLE 2-11
WILDLIFE AREA AND TIME STIPULATIONS

SPECIES	TIME PERIODS	AREA
<u>Big Game</u>		
Pronghorn antelope	Yearlong	Entire Habitat Area
Desert bighorn sheep	Yearlong	Entire Habitat Area
<u>T&E and Candidate Species</u>		
Common black hawk	3/1-8/30	½ mi radius from nest
Ferruginous hawk	2/1-7/30	½ mi radius from nest
Peregrine falcon	2/1-8/30	½ mi radius from nest
<u>Species of Concern</u>		
Golden eagle	2/1-7/15	½ mi radius from nest
<u>Special Habitats</u>		
Riparian, springs, wetlands, ponds, arroyo habitats	Yearlong	Within 500 feet

Source: BLM Files, 1990.

Grazing of domestic sheep will not be allowed in bighorn sheep habitat areas.

Prescribed burn projects are designed to improve wildlife habitat. Rangeland management practices and rangeland improvements are designed or modified to maintain or improve wildlife habitats. Livestock grazing management will incorporate the needs of key plant species important to wildlife.

All new fences are built to allow for wildlife passage in accordance with BLM fence standards. Any existing fences obstructing wildlife movements will be brought into conformance with the adopted standards. Wildlife escape devices are installed on all new and existing water tanks or troughs within the Mimbres Resource Area.

The construction of new roads into crucial wildlife habitats will be avoided. Permanent or seasonal road closures may be instituted where problems exist or are expected.

Raptor habitat will be improved by requiring all new powerlines to be constructed to "electrocution proof" specifications. Any existing lines also may be modified to be "electrocution proof."

As HMPs are developed and implemented, particularly where the use of Sikes Act funds are involved, attention will be given to the development of basic facilities for users such as parking lots and trailheads.

Sikes Act projects to maintain, improve, or enhance wildlife habitat will be developed and implemented throughout the Resource Area.

CULTURAL AND PALEONTOLOGICAL RESOURCES

The objective of the Mimbres cultural resource program is to manage cultural resources on public land in a manner that protects and provides for their proper use. Cultural resources include archaeological, historic, and socio-cultural properties. Paleontology and natural history are also managed under the cultural resource program

although paleontology is addressed separately in this document.

The degree of management is commensurate with the scientific or socio-cultural values of the resource, the degree of threat, and the resource's vulnerability. Under this concept, the Mimbres Resource Area attempts to protect a representative sample of the full array of cultural resources, both prehistoric and historic, found on BLM-administered public land. Federal laws such as the National Historic Preservation Act of 1966 (NHPA) as amended, the Archaeological and Historic Preservation Act of 1974, the Archaeological Resources Protection Act (ARPA) of 1979 as amended, the American Indian Religious Freedom Act (AIRFA) of 1978, the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), and FLPMA provide for the protection and management of cultural resources.

These laws are implemented through Federal regulations which provide guidance for the cultural resource program in meeting the requirements of the law. These regulations, as amended, determine how the NHPA shall be implemented by Federal agencies, State Historic Preservation Officers (SHPOs), and the Advisory Council on Historic Preservation. In New Mexico, a Programmatic Memorandum of Agreement (PMOA) between the above three parties further defines these roles and streamlines the consultation process.

In addition to Federal regulations, special agreements such as the PMOA cited above, instruction manuals, and memoranda are issued at various departmental levels to provide both general and specific guidance for the management of cultural resources. Current instruction memoranda issued at the National, State, and District levels are retained in the Mimbres Resource Area files and are incorporated by reference.

Archaeological and historic resources are evaluated initially under the eligibility criteria of the National Register of Historic Places. Sites listed or eligible for the National Register are managed under BLM procedures which have been

developed in conformance with relevant laws and regulations.

Socio-cultural resources are managed in accordance with AIRFA and NAGPRA, and with relevant sections of the regulations, which take into account concerns of Indian tribes in the implementation of ARPA. The consultation process with Indian tribes concerning sites and locations of traditional religious significance is open and on-going and has occurred in the preparation of this document.

Inventory

The BLM undertakes inventory and maintains a cultural resource database for all BLM-administered public land. These inventories are categorized into three classes: Class I - Existing inventory and literature search; Class II - Sampling field inventory (all sample units are inventoried to Class III standards); and Class III -Intensive field inventory. Except under certain specific conditions set forth under the BLM Cultural Resource Manuals, Class III inventory is required before any surface disturbance may occur.

The Mimbres Resource Area maintains a cumulative site inventory documenting the locations of all known sites, all areas surveyed, and areas known to be devoid of cultural resources. In the Mimbres Resource Area, the latter situation exists only in isolated tracts previously subject to Class III survey with negative results, or subject to total surface alteration in the past through natural or human forces. All unsurveyed portions of the Mimbres Resource Area can be expected to contain varying densities of cultural resources.

A Class I inventory has been completed under a cooperative agreement with NMSU. Cultural resources in the Mimbres Resource Area were organized into five classes and subclasses which roughly parallel traditional Southwestern cultural/temporal distinctions: (1) Paleoindian, (2) Archaic, (3) Pueblo (Mogollon), (4) Historic, and (5) Unknown. These management classifications generalize broad, temporally-based classes of sites, allowing the development of long-term management strategies appropriate to a particular class.

Approximately 3,000 cultural resource sites are presently recorded within the Mimbres Resource Area. Estimates on the total number of sites range from 50,000 to 100,000. Among the recorded and projected sites, a large percentage are probably eligible for inclusion in the National Register of Historic Places, primarily under Criterion "D". Two sites within the Mimbres Resource Area are currently listed on, or have been formally nominated to, the New Mexico State Register of Historic Properties. These are Fort Cummings and Cooke's Springhouse (none are on the National Register).

Evaluation

The management goal category system establishes long-term strategies for each of the five classes of cultural resources. These goal categories provide the basis for committing individual cultural resource sites or properties to a specific-use category.

BLM evaluates cultural resources according to the use-category system. This category system is based on the consideration of actual or potential use of individual sites or properties and includes: (1) Current Scientific Use, (2) Potential Scientific Use, (3) Conservation for Future Use, (4) Management Use, (5) Socio-Cultural Use, (6) Public Use, and (7) Discharge Use.

Cultural Resource Management Plans

The Mimbres Resource Area is currently implementing the Organ Mountains Coordinated Resource Management Plan and the Fort Cummings and Butterfield Trail Cultural Resource Management Plans. Future plans would be developed for some of the ACECs identified in this RMP/EIS.

Protection

The Mimbres Resource Area protects cultural resources on a limited basis through the application of both administrative (such as off-road vehicle closure) and physical measures (such as fencing) as necessitated by the cultural resource's scientific and socio-cultural value, vulnerability, and degree of threat. Interim

protection focuses primarily on the Patrol and Surveillance Plan, until specific cultural resource management objectives are developed.

Mimbres Resource Area has implemented a formal Patrol and Surveillance Plan designed to protect major, well-known sites, investigate conditions of vandalism and natural forces in remote areas, and increase site inventories through site recordation during patrols. An active program of signing cultural resource properties under threat of active or potential vandalism will continue. These current management practices appear to have decreased the level of vandal-caused damage to specific sites, such as Fort Cummings, and have had positive effects throughout the Mimbres Resource Area. Vandalism appears to have stabilized at a level reduced from previous years.

Resource Stabilization

Although vandalism appears to have stabilized in recent years, extensive past vandalism is a primary cause in the rapid deterioration of the sites which are presently most endangered.

Actions to stabilize degradation of ruins will be common to all RMP alternatives. These actions may involve physical measures to control erosion and arroyo cutting and acquisition of sterile fill from BLM sources for recontouring of damaged sites. Erosion control may average 10 acres of protective measures per year and recontouring may require an average of 2,000 cubic yards of fill annually.

Appendix E provides further detail on cultural resources, inventory, goal systems, and use categories.

Program Direction

The legislative and regulatory framework cited at the beginning of this section is implemented in the field by the Mimbres Resource Area cultural resource program outlined above. The cultural resource program protects archaeological and historical properties from impacts through the Section 106 process of the NHPA and has evolved to also proactively manage significant properties

on public land. In addition to the existing program, two elements of continuing management guidance need to be focused through planning and implemented through this RMP. These are inventory and nomination of sites to the National Register.

Section 110 of the NHPA and ARPA as amended, state that it is the responsibility of each Federal agency to establish a program to locate, inventory, and nominate all properties under the agency's ownership or control that appear to qualify for inclusion in the National Register. The Mimbres Resource Area cultural resource program will meet its responsibilities to Section 110 by establishing a goal for completion of a 10-percent inventory over the 20-year life of the Plan.

Although the 10-percent sample will be stratified across the entire Mimbres Resource Area, an initial focus will be in Hidalgo and Luna Counties and all cultural ACECs. This sample will provide comprehensive data which may be used to determine significance of sites and enable the BLM to make well-balanced decisions. An overall goal of the sample inventory will be to gather sufficient data to build a model of cultural processes which are reflected in site density and distribution for the Mimbres Resource Area.

In addition, National Register nominations will be prepared on a regular basis. A goal of one nomination per year has been set. These actions will allow the cultural resources staff to make better informed decisions about the direct and indirect impacts on cultural resources. It will also significantly strengthen the current management approach for protection of cultural resource sites.

Paleontology

Paleontological resources consist of the fossil record of plant and animal life and are protected under FLPMA and managed through the issuance of scientific use permits (for vertebrate fossils). Although significant paleontological resources occur in Mimbres Resource Area, the resource has required only a low level of management attention. Use by both professional researchers and hobby collectors has been limited in comparison to other regions where either higher

interest in fossil collection occurs, or where conflicting land uses have raised paleontology as a resource issue. The New Mexico State Office presently issues one to two permits for scientific use of paleontological resources each year in the Mimbres Resource Area.

RECREATION

Recreation programs are managed according to multiple-use principles unless otherwise specified by law (such as FLPMA) or BLM policy. The objective of the program is to ensure the continued availability of quality outdoor recreation opportunities and experiences that are not readily available from other sources. Recreation use is managed in order to protect the health and safety of visitors; to protect natural, cultural, and other resource values; to stimulate public enjoyment of public land and to resolve user conflicts. The Recreation 2000 initiative places recent added emphasis on expanding and creating a more effective recreation program Bureauwide.

A range of outdoor recreation opportunities such as backpacking, camping, sightseeing, hunting, climbing, picnicking, mountain biking, and motorcycling will continue to be provided for all segments of the public, commensurate with demand. Trails and other means of public access will continue to be maintained and developed where necessary to enhance recreation opportunities and allow public use.

Developed Recreation

Developed facilities exist only in the Organ Mountains. These include the Aguirre Spring Recreation Area, A. B. Cox Visitor Center, La Cueva Picnic Area, Pine Tree Trail, Baylor Pass Trail, Dripping Springs Natural Area Trail, and the Aguirre Spring Recreation Area Access Road.

Management of these areas is outlined in the Organ Mountains Coordinated Resource Management Plan (BLM 1989).

Dispersed Recreation

Current management direction for dispersed recreation opportunities is provided for in the

regulations and subsequent BLM manuals. The major form of dispersed recreation in the Resource Area is hunting.

Motorized Recreation

It is BLM policy (by Executive Order) that all public land be designated as "open", "limited", or "closed" to motorized and non-motorized vehicle use (see Appendix F-2). Public land in the Mimbres Resource Area is "open" to motorized vehicles unless an interim, standard, or emergency closure designation is in effect or is needed to restrict or close areas to protect resources, reduce user conflicts, or enhance public safety.

Scenic or Backcountry Byways

BLM's program of designating certain roads as scenic or backcountry byways will continue. After designation, byway management implementation plans will be developed and the routes will be signed. Proposed roads include the following:

- Aguirre Spring Recreation Area Road
- Red Rock Road
- Highway 81, Hachita to Mexican border
- Antelope Pass (U.S. 80)
- Highway 26, Deming to Hatch
- Dripping Springs Natural Area Road
- Baylor Canyon Road

Environmental assessments of nominations will be prepared on a case-by-case basis.

Cave Inventory and Management

An ongoing inventory of cave resources will be conducted, and caves will be managed in accordance with the Federal Cave Resources Protection Act of 1988 and related BLM policy. Significant cave locations would not be made public, and any actions which could adversely affect significant caves will be deferred or denied. BLM would take appropriate protection measures as needed.

Recreation Opportunity Spectrum (ROS)

The BLM utilizes the ROS as a framework for defining outdoor recreation opportunity

environments. It is the management tool for inventory, planning, and administration of outdoor recreation resources on public land. A general description of the ROS classes is contained in Appendix F-2.

Currently, ROS objectives have only been established within the Organ Mountains. Table 2-12 displays the public land acreages per ROS class. Additional ROS inventory is needed for the remainder of the Mimbres Resource Area and should be completed within the next 5 years.

TABLE 2-12
ROS CLASS MANAGEMENT ACREAGES
IN THE ORGAN MOUNTAINS RECREATION LANDS

OPPORTUNITY CLASS	ACREAGE
RURAL	17
ROADED NATURAL	5,860
SEMIPRIMITIVE MOTORIZED	14,820
SEMIPRIMITIVE NONMOTORIZED	6,470
TOTAL	27,167

Source: BLM Files, 1990.

VISUAL RESOURCES

Visual resources will continue to be evaluated as part of resource management activity and project planning. A contrast rating process is used as a project assessment tool during environmental review of affected areas. Appropriate stipulations are established to ensure compatibility of the project with management objectives for visual resources.

Management Objectives

The BLM administers visual resources on public land according to four Visual Resource Management (VRM) Class objectives (see Appendix G for descriptions). Table 2-13 displays the total acreages by class of inventoried public and nonpublic lands. These constraints will remain in effect except where modified by management prescriptions for new ACECs.

TABLE 2-13
VISUAL RESOURCE MANAGEMENT ACREAGES
WITHIN THE MIMBRES RESOURCE AREA

CLASS	ACREAGE
VRM CLASS I	8,709
VRM CLASS II	849,842
VRM CLASS III	648,004
VRM CLASS IV	1,572,908
TOTAL	3,079,463

Source: BLM Files, 1990.

The VRM system will continue to be the basic tool for inventory, planning, and management of visual resources on public land. A visual contrast rating will be prepared for all projects proposed within highly sensitive areas and for potentially high impact projects, regardless of location.

Congressionally designated areas are subject to Class I VRM guidelines. WSAs are subject to an interim Class II category.

WILDERNESS

The 14 WSAs in the Mimbres Resource Area will be managed under Interim Management Policy and Guidelines for Land Under Wilderness Review (BLM 1983), until the area is either added to the National Wilderness Preservation System or removed from further wilderness consideration. If designated as wilderness, the area will be managed under the Wilderness Management Policy (BLM 1981). If removed from further wilderness consideration, the area will be managed under the guidance prescribed by this RMP. BLM wilderness recommendations for the 14 WSAs plus the three areas in New Mexico that are administered by the Safford District are shown in Table 2-14 and on Map 2-1.

Wilderness suitability recommendations for the 14 existing WSAs were provided in the New Mexico Statewide Wilderness Study Final Environmental Impact Statement (BLM 1988) and will be

TABLE 2-14
MIMBRES RESOURCE AREA
WILDERNESS RECOMMENDATIONS

WSA	TOTAL BLM ACRES	SUITABLE ACREAGE	NON SUITABLE ACREAGE
Aden Lava Flow	25,287	25,287	0
Alamo Hueco Mountains	16,264	0	16,264
Apache Box*	932	0	932
Big Hatchet Mountains	65,872	45,374	20,498
Blue Creek	14,896	0	14,896
Cedar Mountains	14,911	0	14,911
Cooke's Range	19,608	0	19,608
Cowboy Spring	6,699	6,699	0
Florida Mountains	22,336	0	22,336
Gila Lower Box	8,555	5,835	2,720
Guadalupe Canyon*	4,145	0	4,145
Organ Mountains	7,283	7,283	0
Peloncillo Mountains*	4,061	0	4,061
Robledo Mountains	12,946	0	12,946
Las Uvas Mountains	11,067	0	11,067
West Potrillo Mountains and Mount Riley	157,185	148,540	8,645
TOTAL	382,909	239,018	153,029

Source: BLM New Mexico Statewide Wilderness Study, Final Environmental Impact Statement, 1988.

Note: *Areas administered by the BLM Safford District.

unaffected by this RMP. The RMP will not address wilderness management of any areas designated by Congress as wilderness. Post-designation management will be detailed in separate Wilderness Management Plans. The RMP will prescribe management for any of the 14 WSAs that are released from wilderness study by Congress.

As changes in land ownership occur, newly acquired areas would be inventoried and studied as necessary through the RMP process.

SPECIAL STATUS SPECIES (T&E)

The Endangered Species Act requires that the BLM consult with the U.S. Fish and Wildlife Service (FWS) on all actions which may affect a special status species (and to confer for proposed species).

BLM policy, as described in Manual 6840.6, for the endangered species program is to give priority to the protection and management of habitat for known populations of Federal or State listed species, to prevent the listing of Federal candidates, and to assist in recovery of listed species.

Present management for Federal or State species consists of protecting and enhancing habitat and evaluating all proposed actions for their potential impact on known populations of, or potential habitat for, listed or candidate species and to develop and implement recovery plans with objectives for listed species on public land. Conservation of habitat can be accomplished through special designations such as ACECs. The Organ Mountains Coordinated Resource Management Plan also provides specific management guidance for special status species within that area. Compliance with the Endangered Species Act (Section 7 Compliance) is required for all Federal actions regardless of land ownership. Other Coordinated Resource Management Plans and HMPs will include objectives and planned actions for the recovery of listed species within those areas, in accordance with recovery plan objectives.

Inventory for Federal or State candidate species will continue and monitoring programs will be implemented on known populations of listed and candidate species. Where monitoring identifies threats to these populations, appropriate actions will be taken to protect the species and its habitat.

RIPARIAN AND ARROYO HABITATS

In 1987, the BLM adopted a formal riparian policy directed at achieving a healthy and productive ecological condition for public land riparian areas.

Other laws and policies deal with wetlands, floodplains, and related areas which are encompassed by the term riparian.

Riparian areas are defined as an area of land directly influenced by permanent water. They have visible vegetation or physical characteristics reflective of permanent water influence. Spring areas and streambanks are typical riparian areas. Ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil are excluded.

Riparian areas are extremely limited in size and extent throughout the desert Southwest. As such they are unique and extremely important, not only for many species of wildlife that are dependent on them, but also for maintenance of water quality, spring and stream flow, and forage production. Many of these small areas are in a degraded condition. Special management is needed to maintain or restore these important areas.

Arroyo habitats associated with the many dry washes throughout the Resource Area are not considered riparian areas by definition. However, because of their unique and diverse vegetation which often occurs in stark contrast to surrounding desert areas, they are considered important areas which may require special management attention.

Riparian areas will not be disposed of through sale or exchange unless disposal would be in the public interest.

Suppression of wildfire in riparian habitats will have a high priority unless fire is a natural part of the ecosystem. Riparian areas which have burned will be rehabilitated as necessary through protection, reseeding or planting.

Grazing management practices will be designed and established to meet riparian and water quality needs in the development of new AMPs and in the revision of existing AMPs. In those instances where management systems alone cannot meet objectives, provisions for fencing or other means of exclusion will be utilized. No livestock-related activities such as salting, feeding, construction of holding facilities, and stock driveways will be allowed to occur within riparian zones.

Construction activities which remove or destroy riparian vegetation will be avoided.

Minerals management actions and special stipulations or conditions will be designed to be compatible with riparian habitat management goals. Riparian buffer zones will be identified and provided for in the exploration and development of mineral resources.

There will be no vegetation treatments in riparian areas using herbicides.

All new spring developments will be designed to protect riparian areas, while selected existing

spring developments will be modified for the same reason. Where possible, and if the need exists for wildlife, reservoirs will be fenced and water for livestock will be provided away from the reservoirs. Wildlife habitat needs will be considered when reservoir site determinations are made.

In the Mimbres Resource Area, the Gila River Coordinated Resource Management Plan (Lower Gila Box Riparian ACEC), the Organ Mountains Coordinated Resource Management Plan and the San Simon Cienega HMP provide specific guidance for management of riparian resources within those areas. Other special management areas such as the Placitas Arroyo Riparian Demonstration Area would also continue to be protected and managed for their riparian values. New activity plans would be developed on a case-by-case basis, as needed.

Throughout the Mimbres Resource Area, riparian and arroyo habitat management would continue to be coordinated with other programs and activities as needed. Specific programs include Range, Wildlife, Watershed, Recreation, and Lands. Riparian and arroyo habitat values would be addressed in all surface and vegetation disturbing actions. Riparian areas would have a higher priority for funding, management, and protection than arroyo habitats.

THE ALTERNATIVES

The Council on Environmental Quality (CEQ) regulations implementing NEPA require the identification of a proposed action or preferred alternative. These terms are synonymous in this RMP/EIS.

Four alternative RMPs are identified in this section and analyzed in the RMP/EIS. The first alternative discussed represents a continuation of current management practices for the issues and management concerns. This is Alternative A, or the Current Management (No Action) Alternative.

Alternative B, the Resource Preservation Alternative, places primary emphasis on preserving or improving important environmental values. Alternative C, the Resource Production Alternative, places primary emphasis on making public land and resources available for use and

economic development. Alternative D, the Resource Conservation Alternative, is the Preferred Alternative. Conservation is defined as the wise use of resources. This Alternative is designed to provide balanced management direction for a variety resource uses by incorporating features of the other alternatives.

These alternatives were developed as a range of reasonable combinations of resource uses and management practices in order to respond to the planning issues and management concerns, and provide, in combination with the Continuing Management Guidance and Actions, management direction for all resources. They also provide a distinct choice of potential management strategies. Each alternative conforms to FLPMA policy that public land be managed on the basis of multiple use and sustained yield.

ALTERNATIVE A

Alternative A describes the current management for resources affected by issues and how the Mimbres Resource Area would continue to be managed as described in the Continuing Management Guidance section of this Chapter. This alternative provides a baseline for comparison of other alternatives, and may not adequately resolve the issues identified in the RMP/EIS.

The management direction for this alternative was derived from existing management decisions and guidance, such as the Gila and Southern Rio Grande MFPs, laws, regulations, policies, and manuals, as discussed in the Continuing Management Guidance.

ISSUES

1. Land Ownership Adjustments

Based upon existing MFPs, 77,145 acres of land (primarily in Dona Ana County) would continue to be identified as suitable for disposal by R&PP exchange, or sale. Approximately 18,980 acres of State trust land and 13,720 acres of private land

would be considered as suitable for acquisition. The remaining 2,976,675 acres within the Resource Area would remain in public ownership under BLM administration. Map 2-2 depicts the general vicinity of disposal areas under this alternative. This map and the existing land status map (in the back cover of the document) should be used together to visualize the public land patterns.

2. Areas of Critical Environmental Concern (ACECs) and other Special Management Areas (SMAs)

The Mimbres Resource Area would continue to manage the following SMAs which have already been designated: Organ Mountains Scenic ACEC, Gila Lower Box Riparian ACEC, Gila Middle Box ACEC, Central Peloncillo Research Natural Area (RNA) ACEC, Aden Lava Flow RNA, Guadalupe Canyon Outstanding Natural Area and Kilbourne Hole National Natural Landmark. See Table 2-15, Map 2-3 and Appendix H-1. No new SMAs would be identified under this alternative at the present time.

TABLE 2-15
ACECs - ALTERNATIVE A

ACEC	ACRES	VALUES
Central Peloncillo Mountains	3,740	B, S, RES
Gila Lower Box	2,880	SS, RIP
Gila Middle Box	840	SS, RIP
Organ Mountains	<u>8,840</u>	S
TOTAL ACRES	16,300	

Source: BLM Files, 1990

Notes: B = Biological; S = Scenic; RES = Research; SS = Special Status Species; RIP = Riparian

3. Vehicle Management

New vehicle designations would be implemented on a case-by-case basis under this alternative. All public land would remain as currently designated. Emergency closures would also be implemented on a case-by-case basis. Currently, the existing vehicle designations for the Mimbres Resource Area are as follows: 2,582,440 acres undesignated, 380,430 acres limited to existing roads and trails, 74,200 acres limited to designated roads and trails, 4,160 acres open, and 12,590 acres closed (see Map 2-4).

4. Access

The BLM easement acquisition program would continue using management decisions derived from existing land-use plans, and would develop a prioritization of easement acquisition needs. Where not specifically identified, proposals would be evaluated and access developed as needed (through a plan amendment). Under this alternative, the BLM's transportation system would rely mainly on the existing network of Federal, State, and County road systems (see Map 2-5). Access would be acquired as funding would allow.

MANAGEMENT CONCERNS

1. Rights-of-Way (ROWs)

Under this alternative, the Mimbres Resource Area would continue to recognize the existing ROW corridor designations identified in previous land use plans and amendments (see Map 2-5). No new ROW corridors would be established and no exclusion or avoidance areas would be identified.

Major new ROWs would be placed within one of these existing corridors or located elsewhere subject to Interim Management Policy restrictions or standard stipulations, while routine, smaller ROWs would be processed as they are received.

2. Minerals

Under this alternative, all future fluid mineral leases would continue to be issued with the standard BLM oil and gas or geothermal lease

terms contained in all fluid leasing contracts. In addition to standard terms, individual or combinations of stipulations would continue to be applied to the specific areas identified in the Las Cruces/Lordsburg MFP Amendment (BLM 1984). See Appendix A-2.

The following acreage would remain open to mineral leasing subject to standard terms and conditions: oil and gas, 3,358,300; geothermal, 3,326,300; and nonenergy leasables, 3,695,900.

The following acreage would be covered by one or more fluid mineral leasing stipulations: oil and gas, 361,400; geothermal, 360,600; and nonenergy leasables, 0. The following acreage would be open to leasing with no surface occupancy: oil and gas and geothermal, 8,900 and nonenergy leasables, 0. About 409,700 acres would remain closed to mineral leasing (mostly in WSAs). See Map 2-6. Approximately 577,400 acres of withdrawals would remain closed to leasing.

Under this alternative, 4,050,200 acres would remain open to locatable mineral entry and 19,000 acres would remain closed under withdrawals or classification and multiple-use segregations. Locatable mineral activities would be subject to the 3802 or 3809 regulations regarding surface disturbance. About 632,700 acres of nondiscretionary withdrawals would remain closed to mining.

Under this alternative, the Resource Area would remain open to mineral material disposal subject to Interim Management Policy restrictions in WSAs. All mineral material disposal would be subject to special stipulations to mitigate or eliminate impacts to various resources. About 839,200 acres of nondiscretionary withdrawals would remain closed to material sales.

3. Recreation

Under this alternative, the primary emphasis for recreation management would continue within the Organ Mountains based upon the Organ Mountains Coordinated Resource Management Plan. The remainder of the Resource Area would be managed primarily for dispersed recreation opportunities. Limited (primitive) facility development would occur in the Dona Ana Mountains and Gila Lower Box. See Map 2-7.

4. Cultural/Paleontological Resources

Under this alternative, the primary emphasis for site management would remain in the Organ Mountains, at Fort Cummings and along the Butterfield Trail, in accordance with existing Cultural Resource Management Plans. Other major sites would be protected in accordance with the patrol and surveillance plan. All other sites would be protected from surface-disturbing activities in accordance with existing policies and laws. The existing vehicle closure to protect the Paleozoic Trackways site would remain in effect.

5. Wildlife Habitat

Under this alternative, the primary emphasis for wildlife habitat management would remain in the Organ Mountains, Gila Lower Box, San Simon Cienega, Peloncillo Mountains, Florida Mountains and the Big Hatchet/Alamo Hueco Mountains in accordance with existing HMPs. See Map 2-8.

6. Soil, Air, and Water

Under this alternative, watershed management (erosion control) would largely be accomplished through coordination with other programs (such as grazing) and as a part of all surface-disturbing actions (such as routing and reclamation requirements). The only existing site-specific activity plan dealing with soil and water resources is the Gila River Coordinated Resource Management Plan (Gila Lower Box Riparian ACEC). Provisions of this Plan would continue to be implemented. Project development and maintenance would continue on a case-by-case basis.

Provisions to protect air quality would continue to be incorporated into all surface-disturbing actions (such as dust abatement).

7. Vegetation

Under this alternative, sale of vegetation products would continue within existing vegetation sale

areas. Other requests would be considered on a case-by-case basis.

Vegetation land treatments to improve rangeland conditions would be considered in accordance with existing land use plans. A total of 67,742 acres were identified for treatment.

Any increase in vegetation would be reserved for wildlife, watershed, and livestock. The priority would be based upon existing management plans (such as the Organ Mountains Coordinated Resource Management Plan) or decided on a case-by-case basis in areas lacking specific guidance.

Livestock grazing would continue to be excluded on a total of 7,826 acres, including the Gila Lower Box (1,280 acres), the Red Rock Game Farm (1,100 acres) the Central Peloncillo Mountains ACEC (4,446 acres), and the Organ Mountains (1,000 acres).

8. Riparian and Arroyo Habitats

Under this alternative, the primary emphasis on management and protection of riparian and arroyo habitats would occur in the Organ Mountains, the Gila Lower Box and San Simon Cienega in accordance with existing management plans and in other areas under special management such as the Guadalupe Canyon Outstanding Natural Area and the Placitas Arroyo Riparian Demonstration Area. Other riparian areas would be protected through coordination with other programs and activities as needed.

9. Special Status Species

Under this alternative, special status species management emphasis would continue in the Organ Mountains (based upon the Organ Mountains Coordinated Resource Management Plan). Elsewhere special status species management and protection would continue based upon existing laws, regulations, and policies for any surface disturbing actions or other activity that may affect them.

ALTERNATIVE B

Alternative B attempts to resolve the planning issues while placing primary emphasis on preserving or improving important environmental values.

The preservation aspect of the recreation, visual resources, wilderness, paleontological, cultural, wildlife, watershed, and other resource preservation-oriented programs are emphasized under this alternative. In addition, various land acquisitions are proposed to enhance management of these particular programs. The goal of this alternative is to change present management direction so that the issues and management concerns are resolved in a manner that places highest priority on the preservation or improvement of environmental values. Management of various other resources would continue in areas not emphasized under this alternative.

ISSUES

1. Land Ownership Adjustments

Under Alternative B, 42,090 acres of public land would be identified for disposal through R&PP sale, or exchange (see Map 2-9). Certain public land parcels are identified for disposal because of their location or other characteristics that make them difficult and uneconomic to manage; or their disposal would serve important public objectives, including but not limited to, expansion of communities and economic development. These areas are mainly on the East Mesa between Las Cruces and the Organ Mountains, and isolated parcels in Grant County and northern Luna County. None of the areas identified for disposal are within an ACEC or other SMA. This alternative would change the existing decisions regarding disposal (as outlined in the Southern Rio Grande MFP Amendment) on the East Mesa in that only isolated parcels of one section or less would be disposed of within that area. Coordination would be made with the U.S. Forest

Service (USFS) for reservation of easements on parcels adjacent to but not contiguous to Forest land, as they are disposed. Split-estate land with Federal minerals and private surface would be disposed of, especially where there are conflicts on the East Mesa.

All public land not identified for disposal would be managed in accordance with the provisions of Section 102(a) of FLPMA (3,011,730 acres). See Map 2-9. No public land contiguous to USFS land would be disposed regardless of parcel size and no public land within ACECs and other SMAs would be disposed. Public land may be disposed of through exchange in order to consolidate other public land outside of disposal areas. Only lands within disposal areas will be available for exchange outside the Resource Area. Under this alternative, 129,170 acres of State trust land and 97,800 acres of private land would be identified for potential acquisition. All State trust land and private land would be acquired within ACECs and other SMAs within bighorn sheep areas, and in the area between the Gila Middle Box and the Gila Lower Box. Picacho Peak, the Mesilla Valley Bosque Project, and Fort Webster would also be identified for potential acquisition. If acquired, Picacho Peak might have ACEC potential, so the area would be managed under temporary special management until a decision is made in an RMP Amendment or Revision. The temporary special management would include the following:

- Exclude ROW authorizations
- Manage as VRM Class II
- Limit vehicles to designated roads and trails
- Close to mineral material sales

Potential acquisition lands under this alternative would also include all lands identified for acquisition in the Southern Rio Grande MFP Amendment.

2. ACECs and Other SMAs

Under Alternative B, 30 areas would be designated as ACECs. The total acreage of the ACECs would be 320,980 acres. Table 2-16 lists the ACECs with their acreages and resource values and Map 2-10 shows the locations of the proposed ACECs. Appendix H-1 contains a general description, management goals, planned actions, and a map for each ACEC.

The Butterfield Trail (15,690 acres) would be designated and managed for historical resources. The Continental Divide National Scenic Trail (75,270 acres) would be designated and managed for scenic resources. These trails are shown on Map 2-11 and discussed in Appendix H-2. The trails would be managed in accordance with the management prescriptions in Appendix H-2.

The following four areas, totalling 34,480 acres, would be proposed for wilderness study (see Map 2-12). These areas would be managed according to the Bureau's Interim Management Guidelines for areas studied under Section 202 of FLPMA until the study is completed and the areas are either designated as wilderness or released by Congress.

- Organ Needles (7,630 acres)
- Gray Peak (16,080 acres)
- Apache Box (6,300 acres)
- Peña Blanca (4,470 acres)

Appendix I contains the Wilderness Inventory Reports for these areas.

The Gila Lower Box (2,480 acres) and the Gila Middle Box (760 acres) (see Map 2-12) would be proposed as wild and scenic river study areas. Appendix J summarizes the wild and scenic river inventories.

3. Vehicle Management

Under Alternative B, vehicle designations would be made for the entire Resource Area as follows:

- Open: 4,160 acres
- Limited to designated roads and trails: 2,938,920 acres
- Closed: 110,790 acres

These areas are shown on Map 2-13.

The areas open to vehicle use would be the existing intensive use areas: Airport (1,610 acres) and Mossman Arroyo (2,550 acres). Areas closed to vehicle use would be the Mexican border area (73,610 acres), portions of the Organ/Franklin Mountains, Big Hatcher Mountains, and Florida Mountains ACECs (18,900 acres) and all of the following eight ACECs (18,280 acres):

- Apache Box
- Bear Creek
- Box Canyon
- Gila Lower Box
- Gila Middle Box
- Lordsburg Playa
- Old Town
- Uvas Valley

All other areas would be limited to designated roads and trails for vehicle use.

Exceptions to the vehicle designations may be permitted in writing. Exceptions would be made for public health and safety such as law enforcement and search and rescue, especially along the border. Exceptions for mining operations would be addressed in Plans of Operations, notices, permits, and sales.

Exceptions would be made for livestock grazing permittees for emergencies such as emergency feeding, rescue of sick livestock, and emergency fence repairs along the border. Notice would be required within 2 working days of such use. The Border Patrol would be notified immediately for fence repairs along the border. Other exceptions may be permitted in writing for activities such as fence repairs and dirt tank maintenance.

TABLE 2-16
ACECs - ALTERNATIVE B

ACEC	ACRES	VALUES
Aden Lava Flow	26,250	B,S,G,RES
Alamo Hueco Mountains	16,260	B,S,C,P,SS
Antelope Pass	8,710	B,SS
Apache Box	2,630	B,S,C,SS,RIP
Bear Creek	1,480	RIP
Big Hatchet Mountains	67,960	B,S,SS
Box Canyon	600	B
Cedar Mountains	15,020	B
Central Peloncillo Mountains	12,750	B,S,RES,SS
Cooke's Range	23,160	B,S,C,H
Cowboy Spring	6,740	B,SS
Dona Ana Mountains	1,490	B,S,C
Florida Mountains	22,360	S
Gila Lower Box	6,490	SS,RIP
Gila Middle Box	840	SS,RIP
Granite Gap	1,750	B,S,SS
Guadalupe Canyon	4,170	B,SS,RIP
Kilbourne Hole	10,640	G
Las Uvas Mountains	11,150	S
Lordsburg Playa	4,510	B
Los Tules	20	C
Northern Peloncillo Mountains	760	B,SS
Old Town	320	C
Organ/Franklin Mountains	56,480	B,S,C,SS,RIP
Paleozoic Trackways	720	P
Rincon	840	C
Robledo Mountains	13,070	B,S
San Diego Mountain	640	C
Tres Hermanas	960	B
Uvas Valley	<u>2,210</u>	B
TOTAL ACRES	320,980	

Source: BLM Files, 1990.

Notes: B = Biological; S = Scenic; G = Geological; RES - Research; C - Cultural;
P = Paleontological; SS = Special Status Species; RIP = Riparian;
H = Historical

4. Access

Under Alternative B, the BLM's transportation system would rely mainly on the existing system of Federal, State, and County roads. A plan amendment would be required for any additional access. Emphasis would be on pedestrian, nonvehicular access. Land ownership adjustments may result in some additional access where land parcels currently prevent legal access.

MANAGEMENT CONCERNS

1. ROWs

Under Alternative B, ROW exclusion areas would be established for 317,230 acres and ROW avoidance areas would be established for 1,134,570 acres. (See Glossary for definitions of ROW exclusion areas and ROW avoidance areas.) ROW exclusion areas would be all ACECs. ROW avoidance areas would be the following:

- Continental Divide National Scenic Trail
- Butterfield Trail
- Bighorn sheep areas
- VRM Class II area
- Areas greater than 20 percent slope

The remainder of the Resource Area would be open to the location of ROWs, subject to standard stipulations (1,602,020 acres). Map 2-14 shows the location of the ROW exclusion and avoidance areas.

The BLM would encourage new facilities to be located near existing sites or in existing corridors. For existing corridors within ROW exclusion and avoidance areas, existing uses would be grandfathered and new uses allowed only within existing corridors.

The following special stipulations would apply within avoidance areas under Alternative B:

- Facilities would not be located parallel to the Continental Divide National Scenic Trail or Butterfield Trail within avoidance areas.
- Facilities would not be located within $\frac{1}{4}$ mile of any stage station on the Butterfield Trail.

- Facilities would not be located in riparian areas.
- Construction activities would not take place on critical soils on slopes over 20 percent without special mitigation.
- Access routes would be limited and considered on a case-by-case basis. In some cases, construction and maintenance activities would need to be done aurally.

2. Minerals

Under Alternative B, the following areas, totalling 109,520 acres, would be withdrawn from locatable mineral entry (see Map 2-15):

- Apache Box ACEC
- Cooke's Peak ACEC
- Florida Mountains ACEC
- Guadalupe Canyon ACEC
- Organ/Franklin Mountains ACEC
- Paleozoic Trackways ACEC

The remainder of the Resource Area would be open to locatable mineral entry. About 632,700 acres in withdrawals would remain closed to mining.

Under this alternative, all ACECs, the Butterfield and Continental Divide Trails, and the West Potrillo Mountains WSA would be closed to mineral material disposal (576,800 acres). See Map 2-15. Community Pit Number 1 would also be closed to mineral material disposal. The remainder of the Resource Area would be open to mineral material disposal, subject to standard stipulations. A competitive sale program would be established; the site(s) would be determined later based on mineral surveys and would probably be within 10 miles of Las Cruces. Miscellaneous negotiated sales would be discontinued. About 839,200 acres in withdrawals would remain closed to material sales.

Under Alternative B, 320,940 acres would be closed to mineral leasing (see Map 2-15). This would include all ACECs, in addition to the existing closed areas. The current stipulations for mineral leasing would continue (274,000 acres).

About 92,000 acres would be open to leasing with no surface occupancy. The remainder of the Resource Area would be open to fluid mineral leasing, subject to standard terms and conditions: oil and gas, 3,451,300 acres; geothermal, 3,418,500 acres; and nonenergy leasables, 3,692,500 acres. About 577,400 acres of withdrawals would remain closed to leasing.

The following mitigating measures would be applied to lands open to locatable (under Plan of Operations only), saleable, or leasable mineral entry:

- Riparian areas would not be disturbed
- Activities on critical soils on slopes over 20 percent would require special mitigation

3. Recreation

Under Alternative B, management of the two existing Special Recreation Management Areas (SRMAs) would continue. The Organ Mountains SRMA would continue to be managed in accordance with the Organ Mountains Coordinated Resource Management Plans and the Gila Lower Box SRMA would continue to be managed in accordance with the Gila River Coordinated Resource Management Plans. See Map 2-7.

The focus of interpretive and educational efforts would be on ACECs where this is part of the management prescription for the ACEC (see Appendix H-1).

The remainder of the Resource Area would be managed primarily for dispersed recreation opportunities.

4. Cultural and Paleontological Resources

The following objectives and actions would be implemented to resolve the cultural and paleontological resources management concern:

- Manage for information potential (data retrieval, research)

- Manage for public values (interpret)
- Manage for conservation (future use)

Table 2-17 identifies the actions that would be implemented to achieve each objective.

Under Alternative B, the following cultural and paleontological areas would be designated as ACECs (see Issue 2, ACECs and Other SMAs):

- Alamo Hueco Mountains
- Apache Box
- Cooke's Range
- Dona Ana Mountains
- Los Tules
- Old Town
- Organ/Franklin Mountains
- Paleozoic Trackways
- Rincon
- Robledo Mountains
- San Diego Mountains

The ACECs would be managed in accordance with the management prescriptions listed in Appendix H-1.

The Butterfield Trail (15,690 acres) would be designated as a special management area for historical resources (see Issue 2, ACECs and other SMAs).

Site management in the Organ Mountains (Organ/Franklin Mountains ACEC), at Fort Cummings (Cooke's Range ACEC), and along the Butterfield Trail would continue in accordance with the existing Coordinated or Cultural Resource Management Plans for those areas.

5. Wildlife Habitat

Under Alternative B, new HMPs would be developed in the Columbus area, the Cooke's Range/Nutt area, the Robledo Mountains, the Uvas Mountains, the Cedar Mountains, and the West Potrillo Mountains (see Map 2-8). Table 2-18 lists these areas with the priority species, objectives, population goals, and actions. Management of existing HMPs would continue.

TABLE 2-17
MANAGEMENT OBJECTIVES ACHIEVED BY PLANNED ACTIONS
ALTERNATIVE B

ACTIONS	INFORMATION	PUBLIC VALUES	CONSERVATION
Eliminate livestock grazing (Old Town, Fort Cummings, and Dripping Springs Natural Area in accordance with Cultural Resource Management Plans and ACEC management prescriptions).	X	X	
Class III inventories (Fort Cummings, San Diego Mountain, Pony Hills, and Rincon ACECs).	X	X	
Research historic trails and roads (Camino Real, Santa Rita Copper Trail, Spanish exploration routes, and historic wagon roads).	X	X	
Research historic mining features (Town of Cooke, Jose, Stephenson-Bennett, Modoc, Tres Hermanas, Pyramids, Pinos Altos, Peloncillos, Floridas, Town of Carlise/Summit).	X	X	
Research/field schools (Old Town, Bruton Bead, Indian Basin, East Potrillo, South Florida, Camp Cody sites).	X	X	
Restrict public access to the following rockshelters: Apache Box, Apache Cave, Stein's Cave and elsewhere as needed.	X		X
Acquire Butterfield Trail stage stations.	X	X	
Manage Old Town/Pony Hills sites in accordance with Mimbres Culture Study legislation if it is passed.	X	X	X
Close road to Bruton Bead site.	X	X	
Fence/cover with sterile fill the Los Tules site.			X
Transfer BLM portion of Redrock cemetery to National Park Service.	X	X	
Implement provisions of Paleozoic Trackways Study legislation.	X	X	
Encourage paleontological studies of Robledo Mountains, Aden Lava Flow, and Alamo Hueco Mountains.	X	X	

Source: BLM Files, 1990.

TABLE 2-18
WILDLIFE HMPs
ALTERNATIVE B

HMP AREA	PRIORITY SPECIES	OBJECTIVES	POPULATION GOALS (MINIMUM)	ACTIONS
Columbus	Antelope ^{a/}	Transplant/ introduce	50	Fence modification.
Cooke's Range/Nutt	Deer/Antelope ^{a/}	Deer: improve habitat Antelope: trans- plant/introduce	Deer: 500 Antelope: 100	Fence modification. Water development. Prescribed burning.
Robledo Mountains	Deer/Antelope ^{a/}	Deer: improve habitat Antelope: trans- plant/introduce	Deer: 400 Antelope: 50	Fence modification. Water development.
Las Uvas Mountains	Deer	Improve habitat	400	Water development.
Cedar Mountains	Deer/Antelope ^{a/}	Deer: improve habitat Antelope: trans- plant/introduce	Deer: 300 Antelope: 100	Fence modification. Water development.
West Potrillo Mountains	Deer/Quail	Deer: improve habitat Quail: improve or enhance habitat	Deer: 400	Water development. Exclosures near water.
Organ/Franklin Mountains ^{b/}	Deer/Bighorn		Deer: 500 Bighorn: 100	Prescribed burning. Water development.
Florida Mountains ^{b/}	Deer/Bighorn		Deer: 650 Bighorn: 75	Prescribed burning. Water development.
Big Hatchet/Alamo Hueco Mountains ^{b/}	Bighorn/Deer		Bighorn: 750 Deer: 600	Prescribed burning. Fence modifications.
Peloncillo Mountains ^{b/}	Bighorn/Deer		Bighorn: 400 Deer: 900	Fence modifications.

Source: BLM Files, 1990; New Mexico Department of Game and Fish, 1990.

Notes: ^{a/}Antelope objectives and goals contingent on habitat inventory.
^{b/}Existing HMP.

Under this alternative, ibex would be removed from the Florida Mountains.

All HMPs would incorporate the following:

- Obtain production (population) data to correlate with monitoring (at a minimum, harvest information by area)
- Monitoring emphasis would be on preferred habitats for wildlife
- Monitoring would incorporate browse utilization/condition/trend

Animal damage control (ADC) actions would be conducted in accordance with annual ADC plans. The plan would consider SMAs (such as WSAs, ACECs), specifying times and conditions for control activities in accordance with management prescriptions, objectives, and goals for each area.

6. Soil, Air, and Water

The objective of the watershed management program would be to reduce soil erosion and improve water quality (nonpoint source pollution), with emphasis on critical soil areas. Critical soils on 0-10 percent slopes would be first priority for land treatments and grazing management to reduce erosion and improve water quality. Critical soils on slopes over 10 percent would be first priority for grazing management to reduce erosion and improve water quality.

Watershed management plans would be developed for the following areas:

- Starvation/China Draw (southeast side of Cooke's Range)
- Mashed O (north side of Cedar Mountains)
- Alamo Hueco/Big Hatchet Mountains (east side)
- Corralitos
- Gila River (Virden to Middle Box, north and south; would include provisions of existing Gila River Coordinated Resource Management Plans)
- Rincon/Hatch (both sides of river)
- Pyramids
- Uvas Valley

The criteria for identification of the areas include nonpoint source impaired watersheds, vegetation, slope, and critical soils. The locations of the areas are shown on Map 2-16.

The focus for management of air quality and efforts to secure guaranteed instream flow would be in ACECs where this is part of the management prescription for the ACEC (see Appendix H-1).

Provisions for erosion control and air quality protection would continue to be incorporated into all surface-disturbing actions.

7. Vegetation

Vegetation Sale Areas

The existing sale areas would be retained in vicinity of Las Cruces and a new sale area would be developed between Deming and Lordsburg.

Desired Plant Communities

The desired plant community concept is defined as a plant community that produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the land use plan goals and activity plan objectives established for the site. The desired plant community becomes the vegetation management objective for the site. The desired plant community must be consistent with the site's capability to produce the identified community through land treatments such as prescribed fire and chemical brush control and through prescribed grazing management under this alternative. (See Table 2-19 and Appendix D.) Under this alternative, utilization of black grama would not exceed an average of 30 percent. Maps showing desired plant communities are available for review in the Mimbres Resource Area Office.

Land Treatments

Grass upland areas would be treated mainly through prescribed grazing management (grazing systems). Grass bottomlands, snakeweed dominated sites, and other shrub-dominated sites (except creosotebush, mesquite, and mixed desert shrub <10 percent slope) would be treated through combinations of prescribed burning and

TABLE 2-19
DESIRED PLANT COMMUNITY OBJECTIVES^{a/}
ALTERNATIVE B

PLANT COMMUNITY	% GRASS	% SHRUBS	% FORBS	ACREAGE
Creosotebush	0-10	80-100	0-10	1,091,960
Mesquite	0-10	80-100	0-10	713,960
Snakeweed	50-60	20-30	30-40	443,090
Mixed Desert Shrub ^{b/} (<10% slope)	0-15	60-90	20-30	183,200
Mixed Desert Shrub (>10% slope)	20-30	40-60	10-30	203,940
Mountain Brush	35-55	30-40	20-30	158,630
Pinyon-Juniper/Oak Woodland/Conifer	0-30	40-70	0-30	59,350
Grass Bottomlands	70-80	10-20	10-20	572,540
Grass Uplands	65-80	20-30	15-30	676,270
Riparian	30-80 (grass or grasslike)	40-60 (woody veg)	30-60	4,600
Arroyo	0-15	40-70	10-20	21,160

Source: BLM Files, 1990.

Notes: ^{a/}Specific species will be identified for each plant community at the activity planning level.
^{b/}The mixed desert type includes the tarbush, catclaw, whitethorn, mariola, and mixed desert shrub sub-types.

prescribed natural fires as well as prescribed grazing management. Chemical treatments would not be used under this Alternative. Creosotebush, mesquite, and mixed desert shrub (<10 percent slope) types will not respond to grazing management alone. They do not usually contain enough fine fuels to make the use of prescribed burning or prescribed natural fire feasible to effect changes in these communities. For these reasons, the existing plant communities would remain unchanged under this alternative. Fire suppression would play a major role in maintaining pinyon-juniper, oak woodland, and conifer communities, except where prescribed natural fires may benefit these areas (such as low intensity ground fires where scorch heights are low enough to prevent damage to trees). See Table 2-20 and Map 2-17.

All areas treated by prescribed burning or prescribed natural fires would be rested from grazing for at least two growing seasons in areas where livestock use occurs (see Table 2-20 and Map 2-17). Exceptions would be grass bottomland where grazing would be allowed after 4 inches of regrowth. Any increases in forage would be reserved for wildlife and watershed. Prescribed burn plans and EAs would be developed for specific areas prior to the use of prescribed burning or prescribed natural fires.

Livestock Grazing

Under Alternative B, livestock grazing would be eliminated on a total of 201,470 acres. Grazing would be excluded to provide maximum protection for bighorn sheep habitat, riparian areas, critical

TABLE 2-20
LAND TREATMENT
ALTERNATIVE B

PLANT COMMUNITY	ACRES OF PRESCRIBED (PX) BURN OR PX NATURAL FIRE	PURPOSE
Mixed Desert Shrub (>10% slope)	86,380	Wildlife, watershed, biodiversity
Snakeweed	281,250	Wildlife, watershed, biodiversity
Mountain Brush	141,510	Wildlife, watershed, biodiversity
Grass Bottomland	168,550	Improve plant vigor, reduce shrub invasion, improve palatability
Grassland Uplands	Undetermined-to be used as needed	Control shrub invasion
TOTAL	677,690	

Source: BLM Files, 1990.

soils, fragile lands, and other sensitive resources within these ACECs. Grazing by livestock would continue to be excluded in the Gila Lower Box (1,280 acres) and the Red Rock Game Farm (1,100 acres) and would also be eliminated in the following proposed ACECs:

- Alamo Hueco Mountains (16,240 acres)
- Apache Box (1,830 acres)
- Bear Creek (1,480 acres)
- Big Hatchet Mountains (67,960 acres)
- Cedar Mountains (15,020 acres)
- Central Peloncillo Mountains (12,750 acres)
- Cooke's Range (23,160 acres)
- Guadalupe Canyon (4,170 acres)
- Organ/Franklin Mountains (56,480 acres)

Fragile Lands

The fragile land areas described on Map 2-18 would receive high priority for Allotment Management Plan or other activity plan revision or development, allotment monitoring, land treatments, allotment re-categorization, and possible reduction or exclusion of surface

disturbing activities including range improvement development and livestock grazing use. Efforts would be directed towards improving range condition and reaching desired plant community objectives within these areas. Fragile land areas within ACECs would receive the highest priority for improved management.

8. Riparian and Arroyo Habitat

Under Alternative B, riparian habitat in the following areas would be included in the ACEC designations proposed under Issue 2, ACECs and other SMAs:

- Apache Box
- Bear Creek
- Gila Lower Box
- Gila Middle Box
- Guadalupe Canyon
- Organ/Franklin Mountains

The ACECs would be managed in accordance with the management prescriptions listed in Appendix H-1.

Management of riparian resources in the Gila Lower Box, the Organ Mountains, and the San Simon Cienega would continue in accordance with the existing management plans for those areas. Instream flows for the Gila Lower and Middle Box ACECs would be secured when State law allows. The Placitas Arroyo Riparian Demonstration Area would continue as a riparian SMA.

9. Special Status Species

Under Alternative B, special status species in the following areas would be included in the ACEC designations proposed under Issue 2, ACECs and other SMAs:

- Alamo Hueco Mountains
- Antelope Pass

- Apache Box
- Big Hatchet Mountains
- Central Peloncillo Mountains
- Gila Lower Box
- Gila Middle Box
- Granite Gap
- Guadalupe Canyon
- Northern Peloncillo Mountains
- Organ/Franklin Mountains

The ACECs would be managed in accordance with the management prescriptions listed in Appendix H-1.

Management of special status species in the Organ Mountains would continue in accordance with the existing Organ Mountains Coordinated Resource Management Plan.

ALTERNATIVE C

Alternative C attempts to resolve the planning issues while placing primary emphasis on making public land and resources available for production and development.

The production aspect of the minerals, grazing, off-road vehicle, and similar production-oriented programs are emphasized under this alternative. In addition, the problem of scattered land ownership would be resolved by disposing of unmanageable BLM tracts. The goals of this alternative is to change management direction so that the issues and management concerns are resolved in a manner that generally places highest priority on the production of resources and economic development from the public land; management of various other resources would continue in areas not emphasized under this alternative.

ISSUES

1. Land Ownership Adjustments

Under Alternative C, 232,710 acres of public land would be identified for disposal through R&PP sale, or exchange (see Map 2-19). Certain public land parcels are identified for disposal because of their location or other characteristics that make them difficult and uneconomic to manage; or their disposal would serve important public objectives, including but not limited to, expansion of communities and economic development. These areas are mainly on the East Mesa between Las Cruces and the Organ Mountains, the West Mesa, and isolated parcels in Grant County and northern Luna County. None of the areas identified for disposal are within an ACEC or other SMA. The existing decisions regarding disposal (as outlined in the Southern Rio Grande MFP Amendment) (BLM 1986) would be carried forward entirely. Coordination would be made with the U.S. Forest Service for reservation of easements on parcels adjacent or contiguous to Forest land as they are disposed.

All public land not identified for disposal would be managed in accordance with the provisions of Section 102 (a) of FLPMA (2,821,110 acres). See Map 2-19. No public land within ACECs and other SMAs would be disposed. Public land may be disposed of through exchange in order to consolidate other public land outside of disposal areas. Only lands within disposal areas will be exchanged for lands outside the Resource Area.

Under this alternative, 56,050 acres of State trust land and 37,480 acres of private land would be identified for potential acquisition. All State trust land and private land would be acquired within ACECs and other SMAs. Potential acquisition lands under this alternative would also include Spring Canyon State Park, Rockhound State Park, Leasburg Dam/Fort Selden State Park, City of Rocks State Park, and Pancho Villa State Park.

2. ACECs and Other SMAs

Under Alternative C, 27 areas would be designated as ACECs. The total acreage of the ACECs would be 86,980 acres. Table 2-21 lists the ACECs with their acreages and resource values and Map 2-20 shows the locations of the proposed ACECs. Appendix H-1 contains a general description, management goals, planned actions, and a map for each ACEC.

The Butterfield Trail (15,690 acres) would be designated as a special management area for historical resources and the Continental Divide National Scenic Trail (21,800 acres) would be designated as a special management area for scenic resources. These trails are shown on Map 2-11 and discussed in Appendix H-2. The trails would be managed in accordance with the management prescriptions in Appendix H-2.

The following four areas, totalling 34,480 acres, would be studied for wilderness potential (see Map 2-12). These areas would be managed according to the Bureau's Interim Management Guidelines for areas studied under Section 202 of

TABLE 2-21
ACECs - ALTERNATIVE C

ACEC	ACRES	VALUES
Aden Lava Flow	3,930	B,S,G,RES
Alamo Hueco Mountains	4,670	B,S,C,P,SS
Antelope Pass	8,710	B,SS
Apache Box	2,630	B,S,C,SS,RIP
Big Hatchet Mountains	4,390	B,S,SS
Bishop's Cap	1,930	B,S
Central Peloncillo Mountains	12,750	B,S,RES,SS
Cooke's Range	4,440	B,S,C
Fillmore Canyon	70	B,S,C,RIP
Florida Mountains	5,670	S
Fort Cummings	290	H
Franklin Mountains	3,890	B,S
Gila Lower Box	6,490	SS,RIP
Gila Middle Box	840	SS,RIP
Granite Gap	1,750	B,S,SS
Guadalupe Canyon	4,170	B,SS,RIP
Ice Canyon	330	B,S,C
Kilbourne Hole	5,480	G
Los Tules	20	C
Massacre Peak	480	C
Old Town	320	C
Organ Mountains	8,840	S
Paleozoic Trackways	720	P
Pony Hills	480	C
Rincon	840	C
San Diego Mountain	640	C
Uvas Valley	<u>2,210</u>	B
TOTAL ACRES	86,980	

Source: BLM Files, 1990.

Notes: B = Biological; S = Scenic; G = Geological; RES = Research; C = Cultural;
P = Paleontological; SS = Special Status Species; RIP = Riparian;
H = Historical

FLPMA until the study is completed and the areas are either designated as wilderness or released by Congress.

- Organ Needles (7,630 acres)
- Gray Peak (16,080 acres)
- Apache Box (6,300 acres)
- Peña Blanca (4,470 acres)

Appendix I contains the Wilderness Inventory Reports for these areas.

The Gila Lower Box (2,480 acres) and the Gila Middle Box (760 acres) would be designated as Wild and Scenic River study areas. See Map 2-12. Appendix J contains a summary of the wild and scenic river inventories for the Gila River.

3. Vehicle Management

Under Alternative C, vehicle designations would be made for the entire Resource Area as follows:

- Open: 16,190 acres
- Limited to existing roads and trails: 2,827,330 acres
- Limited to designated roads and trails: 155,400 acres
- Closed: 54,900 acres

These areas are shown on Map 2-21.

The areas open to vehicle use would be the Aden Hills Open Area (8,700 acres) and the Lordsburg Playa Open Area (7,490 acres). The support needs for these areas would include a Class 3 cultural survey. The areas limited to designated roads and trails for vehicle use would be all SMAs and the Broad Canyon competitive motorcycle race area. The Mexican border area (54,900 acres) would be closed to vehicle use. All other areas would be limited to existing roads and trails for vehicle use.

Exceptions to the vehicle designations may be permitted in writing. Exceptions would be made for public health and safety such as law enforcement and search and rescue, especially

along the border. Exceptions for mining operations would be addressed in Plans of Operations, notices, permits, and sales. Exceptions would be made for livestock grazing permittees for emergencies such as emergency feeding, rescue of sick livestock, and emergency fence repairs along the border. Notice would be required within 2 working days of such use. The Border Patrol would be notified immediately for fence repairs along the border. Other exceptions may be permitted in writing for activities such as fence repairs and dirt tank maintenance.

4. Access

Under Alternative C, access would be developed to 24 areas by building new roads, land ownership adjustment, easement acquisition, or condemnation. Emphasis would be on vehicular access. The areas are shown on Map 2-22 and are listed below (the numbers in parentheses are referenced on the map):

Alamo Hueco Mountains (24) - Acquire legal public access for vehicular use to the north boundary of the WSA/ACEC.

Animas Mountains (14) - Acquire legal public access for vehicular use to the boundary of Cowboy Spring WSA/ACEC and to the Gillespie Peak area. Develop physical access for vehicular use to the north end of Animas Mountains from State Road 9.

Apache Box (1) - Acquire legal public access to the boundary (gate).

Apache Hills/Sierra Rica (21/22) - Acquire legal public access for vehicular use.

Bear Creek (2) - Acquire administrative access.

Big Hatchets (23) - Acquire legal public access for vehicular use to the north, east, and west boundaries of the WSA/ACEC (Chaney, Thompson, and Sheridan Canyons).

Black Mountain/Coyote Hills (18/17) - Acquire legal public access for vehicular access.

Blue Creek (3) - Acquire legal public access for vehicular use to the WSA boundary.

Burro Mountains (6) - Acquire legal public access for vehicular use (north and south of Gila River).

Cedar Mountains (20) - Acquire legal public access for vehicular use to the boundary of the WSA/ACEC on the north, south, and west sides.

Community Pit No. 1 (36) - Acquire legal access from Shalem Colony Road to public land (approximately ½ mile).

Cooke's Peak (26) - Acquire legal public access for vehicular use on east side (Hadley Draw) and west side (north of Provinger Canyon).

Florida Mountains (28) - Acquire legal public access for vehicular use to the boundary of the WSA/ACEC on the south, east, and west sides (Copper Kettle Canyon, Byer's Spring, and Mahoney Canyon).

Gila Lower Box (5) - Acquire legal public access for vehicular use to the mouth of Nichol's Canyon, Fisherman's Point, and north side.

Gila Middle Box (4) - Acquire legal public access to the boundary on downstream side.

Goodsight Mountains/Sleeping Lady/Rough and Ready Hills (27/34/33) - Acquire legal public access for vehicular use.

Little Hatchets (19) - Acquire legal public access for vehicular access on the north end.

Organ Mountains (38) - Acquire legal public access for vehicular use south of Soledad Canyon through Anderson, Price, et al.

Peloncillo Mountains (13) - Acquire legal public access for vehicular use to the mouth of Owl Canyon (west side) and north of I-10.

Pyramids (8) - Acquire legal public access for vehicular use into Rockhouse Canyon and southeast part of the Pyramids.

Robledo Mountains (35) - Acquire legal public access across private land for vehicular use on the north end (via Fred Huff Road or Faulkner Canyon). Acquire access for vehicles across State trust land on Corralitos Ranch (southwest side of area).

San Simon Cienega (9) - Acquire legal public access to north end.

Tres Hermanas (30) - Acquire legal public access for vehicular access.

West Potrillo Mountains (40) - Acquire legal public access to north and west sides.

The following criteria would guide prioritization of the areas for access development:

- Public demand
- Administrative needs
- Resource values/conflicts
- Availability of existing access

MANAGEMENT CONCERNS

1. ROWs

Under Alternative C, ROW exclusion areas would be established for 84,950 acres and ROW avoidance areas would be established for 303,480 acres. (See Glossary for definitions of ROW exclusion areas and ROW avoidance areas.) ROW exclusion areas would be all ACECs. ROW avoidance areas would be the following:

- Continental Divide National Scenic Trail
- Butterfield Trail
- Bighorn sheep area

The remainder of the Resource Area would be open to the location of ROWs, subject to standard

stipulations (2,665,390 acres). Map 2-23 shows the location of the ROW exclusion and avoidance areas.

The BLM would encourage new facilities to be located near existing sites or in existing corridors. For existing corridors within ROW exclusion and avoidance areas, existing uses would be grandfathered and new uses allowed only within existing corridors.

The following special stipulations would apply within avoidance areas under Alternative C:

- Facilities would not be located parallel to the Continental Divide National Scenic Trail or Butterfield Trail within avoidance areas.
- Facilities would not be located within $\frac{1}{4}$ mile of any stage station on the Butterfield Trail.
- Facilities would not be located in riparian areas.
- Access routes would be limited and considered on a case-by-case basis. In some cases, construction or maintenance activities would need to be done aurally.

2. Minerals

Under Alternative C, the entire Resource Area would be open to locatable mineral entry, subject to standard stipulations. About 632,700 acres in withdrawals would be closed to mining.

Under this alternative, all ACECs and the Butterfield and Continental Divide Trails would be closed to mineral material disposal (124,470 acres). See Map 2-20. The remainder of the Resource Area would be open to mineral material disposal, subject to standard stipulations. About 839,200 acres in withdrawals would remain closed to material sales.

Under Alternative C, the current stipulations for fluid mineral leasing would continue (302,000 acres). A total of 42,300 acres would remain open to mineral leasing with no surface occupancy. The remainder of the Resource Area would be open to mineral leasing, subject to standard terms and

conditions: oil and gas, 3,794,000 acres; geothermal, 3,761,200 acres; and nonenergy leasables, 3,761,200 acres. About 577,400 acres in withdrawals would remain closed to leasing.

The following stipulations would be applied to lands open to locatable (under Plan of Operations only), saleable, or leasable mineral entry:

- Riparian areas would not be disturbed.
- Activities on critical soils on slopes over 20 percent would require special mitigation.

3. Recreation

Under Alternative C, the following new SRMAs would be designated (see Map 2-7):

- Florida Mountains
- Dona Ana Mountains
- Big Hatchet Mountains
- Robledo Mountains/Las Uvas Mountains
- Peloncillo Mountains
- Animas Mountains
- Fort Cummings

The Fort Cummings SRMA would be managed in accordance with the existing Cultural Resource Management Plans. Recreation Area Management Plans (RAMPs) would be prepared for the other six new SRMAs, in the order of priority as they are listed above. These areas would be managed to maintain primitive and semi-primitive recreation opportunities such as developing primitive camp sites, signing, and basic sanitary facilities.

Management of the two existing SRMAs would continue. The Organ Mountains SRMA would continue to be managed in accordance with the Organ Mountains Coordinated Resource Management Plans and the Gila Lower Box SRMA would continue to be managed in accordance with the Gila River Coordinated Resource Management Plans.

Under this alternative, the following State parks would be managed, if they are acquired as proposed under Issue 1, Land Ownership Adjustment:

- Spring Canyon
- Rockhound
- Leasburg Dam/Fort Selden
- Pancho Villa
- City of Rocks

Under this alternative, primitive campsites would be developed in the following areas:

- Animas Mountains
- Peloncillo Mountains
- Big Hatchet Mountains: Cheney Canyon
- Lower Gila Box
- Florida Mountains: Mahoney Park

The focus of interpretive and educational efforts would be on ACECs where this is part of the management prescription for the ACEC (see Appendix H-1).

The remainder of the Resource Area would be managed primarily for dispersed recreation opportunities.

4. Cultural and Paleontological Resources

The following objectives and actions would be implemented to resolve the cultural and paleontological resources management concern:

- Manage for information potential (data retrieval, research)
- Manage for public values (interpret)
- Manage for conservation (future use)

Table 2-22 identifies the actions that would be implemented to achieve each objective.

Under Alternative C, the following cultural and paleontological areas would be designated as ACECs (see Issue 2, ACECs and Other SMAs):

- Alamo Hueco Mountains
- Apache Box
- Cooke's Range
- Fillmore Canyon
- Fort Cummings
- Ice Canyon
- Los Tules

- Massacre Peak
- Old Town
- Paleozoic Trackways
- Pony Hills
- Rincon
- San Diego Mountain

The ACECs would be managed in accordance with the management prescriptions listed in Appendix-H-1. Interpretation for tourism would be provided at Fort Cummings, the Massacre Peak petroglyphs, and the Paleozoic Trackways, with emphasis on facilities for interpretation.

The Butterfield Trail (15,690 acres) would be designated as a historic trail and managed for its historic resource values (see Issue 2, ACECs and Other SMAs). Interpretation for tourism would be provided at the Butterfield Trail stage stops, with emphasis on facilities for interpretation.

Site management in the Organ Mountains (Fillmore Canyon ACEC and Ice Canyon ACEC), at Fort Cummings (Fort Cummings ACEC), and along the Butterfield Trail would continue in accordance with the existing Coordinated or Cultural Resource Management Plans for those areas.

5. Wildlife Habitat

Under Alternative C, new HMPs would be developed in the Columbus area, the Cooke's Range/Nutt area, the Robledo Mountains, the Uvas Mountains, the Cedar Mountains, and the West Potrillo Mountains (see Map 2-8). Table 2-23 lists these areas with the priority species, objectives, population goals, and actions. Management of existing HMPs would continue.

All HMPs would incorporate the following:

- Obtain production (population) data to correlate with monitoring (at a minimum, harvest information by area)
- Monitoring emphasis would be on preferred habitats for wildlife
- Monitoring would incorporate browse utilization/condition/trend

TABLE 2-22
MANAGEMENT OBJECTIVES ACHIEVED BY PLANNED ACTIONS
ALTERNATIVE C

ACTIONS	INFORMATION	PUBLIC VALUES	CONSERVATION
Eliminate livestock grazing (Old Town, Fort Cummings, and Dripping Springs Natural Area in accordance with Cultural Resource Management Plans and ACEC management prescriptions).	X	X	
Class III inventories (Fort Cummings, San Diego Mountain, Pony Hills, and Rincon ACECs).	X	X	
Research historic trails and roads (Camino Real, Santa Rita Copper Trail, Spanish exploration routes, and historic wagon roads).	X	X	
Research historic mining features (Town of Cooke, Jose, Stephenson-Bennett, Modoc, Tres Hermanas, Pyramids, Pinos Altos, Peloncillos, Floridas, Town of Carlise/Summit).	X	X	
Research/field schools (Old Town, Bruton Bead, Indian Basin, East Potrillo, South Florida, Camp Cody sites).	X	X	
Restrict public access to the following rockshelters: Apache Box, Apache Cave, Stein's Cave and elsewhere as needed.	X		X
Acquire Butterfield Trail stage stations.	X	X	
Manage Old Town/Pony Hills sites in accordance with Mimbres Culture Study legislation if it is passed.	X	X	X
Close road to Bruton Bead site.	X		X
Fence/cover with sterile fill the Los Tules site.			X
Transfer BLM portion of Redrock cemetery to National Park Service.	X	X	
Implement provisions of Paleozoic Trackways Study legislation.	X	X	
Encourage paleontological studies of Robledo Mountains, Aden Lava Flow, and Alamo Hueco Mountains.	X	X	

Source: BLM Files, 1990.

Animal damage control (ADC) actions would be in accordance with annual ADC plans. The plan would consider SMAs (such as WSAs, ACECs), specifying times and conditions for control activities in accordance with management prescriptions, objectives, and goals for each area.

6. Soil, Air, and Water

The objective of the watershed management program would be to reduce soil erosion and improve water quality (nonpoint source pollution), with emphasis on critical soil areas. Critical soils on 0-10 percent slopes would be first priority for land treatments and grazing management to reduce erosion and improve water quality. Critical soils on slopes over 10 percent would be first priority for grazing management to reduce erosion and improve water quality.

Watershed management plans would be developed for the following areas:

- Starvation/China Draw (southeast side of Cooke's Range)
- Mashed O (north side of Cedar Mountains)
- Alamo Hueco/Big Hatchet Mountains (east side)
- Corralitos
- Gila River (Virden to Middle Box, north and south; would include provisions of existing Gila River Coordinated Resource Management Plan)
- Rincon/Hatch (both sides of river)
- Pyramids
- Uvas Valley

The criteria for identification of the areas include nonpoint source impaired watersheds, vegetation, slope, and critical soils. The locations of the areas are shown on Map 2-16.

The focus for management of air quality and efforts to secure guaranteed instream flow would be in ACECs where this is part of the management prescription for the ACEC (see Appendix H-1).

Provisions for erosion control and air quality protection would continue to be incorporated into all surface-disturbing actions.

7. Vegetation

Vegetation Sale Areas

The entire land disposal area on the East Mesa would be designated as a vegetation sale area. A new sale area would be developed between Deming and Lordsburg.

Desired Plant Communities

The desired plant community concept is defined as a plant community that produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the land use goals and activity plan objectives established for the site. The desired plant community becomes the vegetation management objective for the site. The desired plant community must be consistent with the site's capability to produce the identified community through land treatments such as prescribed fire and chemical brush control and through prescribed grazing management under this alternative. Under this alternative, utilization of black grama would not exceed an average of 50 percent. See Table 2-24 and Appendix D. Maps showing desired plant communities are available for review in the Mimbres Resource Area Office.

Land Treatments

Grass upland areas would be treated mainly through proper grazing management (grazing systems). Grass bottomlands, mixed desert shrub (>10 percent slope), snakeweed, and mountain brush types would be treated using combinations of prescribed burning, prescribed natural fire, and prescribed grazing management. Creosotebush, mesquite, snakeweed, and mixed desert shrub (<10 percent slope) would be treated almost entirely by the use of chemical herbicides such as pelleted Spike 20P (Tebuthiuron). Usually only areas two sections in size or greater (1,240 acres) would be treated. Isolated areas smaller than 1,240 acres would not be treated. Areas over 10 percent slope and within 6 miles of a perennial stream would also not be treated chemically. Prescribed fire or prescribed grazing would be used to maintain these areas to the extent possible. Fire suppression would play a major role in maintaining pinon-juniper, oak woodland and conifer types, except where prescribed natural fires may benefit these

TABLE 2-23
WILDLIFE HMPs
ALTERNATIVE C

HMP AREA	PRIORITY SPECIES	OBJECTIVES	POPULATION GOALS (MINIMUM)	ACTIONS
Columbus	Antelope ^{a/}	Transplant/ Introduce	50	Fence modification.
Cooke's Range/Nutt	Deer/Antelope ^{a/}	Deer: improve habitat Antelope: trans- plant/introduce	Deer: 250 Antelope: 100	Fence modification. Water development. Prescribed burning.
Robledo Mountains	Deer/Antelope ^{a/}	Deer: improve habitat Antelope: trans- plant/introduce	Deer: 125 Antelope: 50	Fence modification. Water development.
Las Uvas Mountains	Deer	Improve habitat	200	Water development.
Cedar Mountains	Deer/Antelope ^{a/}	Deer: improve habitat Antelope: trans- plant/introduce	Deer: 150 Antelope: 100	Fence modification. Water development.
West Potrillo Mountains	Deer/Quail	Deer: improve habitat Quail: improve or enhance habitat.	Deer: 150	Water development. Exclosures near water.
Organ/Franklin Mountains ^{b/}	Deer/Bighorn		Deer: 250 Bighorn: 100	Prescribed burning. Water development.
Florida Mountains ^{b/}	Deer/Ibex		Deer: 250 Ibex: 400	Prescribed burning. Water development.
Big Hatchet/Alamo Hueco Mountains ^{b/}	Bighorn/Deer		Bighorn: 750 Deer: 300	Prescribed burning. Fence modification.
Peloncillo Mountains ^{b/}	Bighorn/Deer		Bighorn: 400 Deer: 450	Fence modification.

Source: BLM Files, 1990, New Mexico Department of Game and Fish, 1990.

Notes: ^{a/}Antelope objectives and goals contingent on habitat inventory.
^{b/}Existing HMP.

TABLE 2-24
DESIRED PLANT COMMUNITY OBJECTIVES^{a/}
ALTERNATIVE C

PLANT COMMUNITY	% GRASS	% SHRUBS	% FORBS	ACREAGE
Creosotebush	60-75	10-20	10-20	812,010
Creosotebush ^{b/}	0-10	80-100	0-10	334,270
Mesquite	65-75	10-20	10-20	627,180
Mesquite ^{b/}	0-10	80-100	0-10	131,870
Snakeweed	70-80	5-15	5-10	345,990
Snakeweed ^{b/}	50-60	20-30	30-40	96,630
Mixed Desert Shrub (<10% slope)	60-80	15-25	5-15	273,030
Mixed Desert Shrub (>10% slope)	65-80	15-25	5-10	160,830
Mountain Brush	65-80	15-25	5-10	158,500
Pinyon-Juniper/Oak Woodland/Conifer	0-30	40-70	0-30	59,310
Grass Bottomlands	80-95	5-10	5-10	463,550
Grass Uplands	75-85	10-15	5-10	645,880
Riparian	30-80 (grass or grass-like)	40-60 (woody veg)	30-60	4,600
Arroyo	0-15	40-70	10-20	16,160

Source: BLM Files, 1990.

Note: ^{a/} Specific species will be identified for each plant community at the activity planning level.
^{b/} These brush types would remain unchanged because they fall in the buffered area along perennial streams or are above the 0-10 percent slope contour and would not be treated chemically. These areas would generally not respond positively to changes in grazing management alone.

TABLE 2-25
LAND TREATMENTS
ALTERNATIVE C

PLANT COMMUNITY	AC. BURN	AC. CHEMICAL TREATMENT	PURPOSE
Creosotebush	N/A	629,060	Forage production
Mesquite	N/A	455,660	Forage production
Mixed Desert Shrub (<10% slope)	N/A	178,450	Forage production
Mixed Desert Shrub (>10% slope)	86,380	N/A	Forage production, wildlife, watershed
Mountain Brush	141,510	N/A	Forage production, wildlife, watershed
Snakeweed	281,250	207,200	Forage production
Grass Bottomlands	168,550	N/A	Improve plant vigor, reduce shrub invasion, increase forage and palatability
Grass Uplands	Undetermined- used as needed	N/A	Forage production, control shrub invasion
TOTALS	677,690	1,470,370	

Source: BLM Files, 1990.

to prevent damage to trees). Table 2-25 summarizes land treatments for specific plant communities. See Map 2-24.

All areas treated by prescribed burning, prescribed natural fire or chemical herbicides would be rested from grazing for at least two growing seasons, if necessary (in areas where livestock use occurs). Exceptions would be in grass bottomlands where grazing would be allowed after 4 inches of regrowth. Any increase in forage would be reserved for livestock except in mountain areas where it would be reserved for wildlife and watershed. Prescribed burn plans and EAs would be developed for specific areas prior to the use of prescribed burning or prescribed natural fires. Treatment plans and EAs would be prepared for specific chemical treatment areas prior to herbicide application.

Livestock Grazing

Under Alternative C, livestock grazing would be eliminated on a total of 6,546 acres, including the

Red Rock Game Farm (1,100 acres), the Central Peloncillo Mountains ACEC (4,446 acres), and the Organ Mountains (1,000 acres).

Fragile Lands

The fragile land areas described on Map 2-18 would receive high priority for AMP or other activity plan revision or development, allotment monitoring, land treatments, allotment re-categorization, and possible reduction or exclusion of surface disturbing activities including range improvement and livestock grazing use. Efforts would be directed towards improving range condition and reaching desired plant community objectives within these areas. Fragile land areas within ACECs would receive the highest priority for improved management.

8. Riparian and Arroyo Habitat

Under Alternative C, riparian habitat in the following areas would be included in the ACEC

designations proposed under Issue 2, ACECs and other SMAs:

- Apache Box
- Fillmore Canyon
- Gila Lower Box
- Gila Middle Box
- Guadalupe Canyon

The ACECs would be managed in accordance with the management prescriptions listed in Appendix H-1.

Management of the riparian resources in the Gila Lower Box, the Organ Mountains, and the San Simon Cienega would continue in accordance with the existing management plans for those areas. Instream flows for the Gila Lower and Middle Box ACECs would be secured when State law allows. The Placitas Arroyo Riparian Demonstration Area would continue as a riparian SMA.

9. Special Status Species

Under Alternative C, special status species in the following areas would be included in the ACEC designations proposed under Issue 2, ACECs and other SMAs:

- Alamo Hueco Mountains
- Antelope Pass
- Apache Box
- Big Hatchet Mountains
- Central Peloncillo Mountains
- Gila Lower Box
- Gila Middle Box
- Granite Gap
- Guadalupe Canyon

The ACECs would be managed in accordance with the management prescriptions listed in Appendix H-1.

Management of special status species in the Organ Mountains would continue in accordance with the existing Organ Mountains Coordinated Resource Management Plans.

ALTERNATIVE D

Alternative D attempts to resolve the planning issues by incorporating concepts proposed in both the Resource Preservation and Resource Production Alternatives, as well as actions intermediate between the two.

ISSUES

1. Land Ownership Adjustment

Under Alternative D, 158,460 acres of public land would be identified for disposal through R&PP, sale or exchange (see Map 2-25). Certain public land parcels are identified for disposal because of their location or other characteristics that make them difficult and uneconomic to manage; or their disposal would serve important public objectives, including but not limited to, expansion of communities and economic development. These areas are mainly on the East Mesa between Las Cruces and the Organ Mountains, the West Mesa, and isolated parcels in Grant County and northern Luna County. None of the areas identified for disposal are within an ACEC or other SMA. The existing decisions regarding disposal (as outlined in the Southern Rio Grande MFP Amendment) (BLM 1986) would be carried forward with slight modification. Six sections of land adjacent to the proposed Organ Mountains National Conservation Area that were identified for disposal in the Southern Rio Grande MFP Amendment would not be disposed under this alternative. Coordination would be made with the U.S. Forest Service for reservation of easements on parcels adjacent to but not contiguous with Forest land as they are disposed. To facilitate orderly disposal on the East Mesa, two disposal zones would be delineated:

- First priority for disposal would be public land west of a north-south line 1 mile east of the boundary between R. 2 E. and R. 3 E.
- Second priority for disposal would be public land east of the line described above.

All public land not identified for disposal would be managed in accordance with the provisions of Section 102(a) of FLPMA (2,895,360 acres). See

Map 2-25. No public land contiguous to USFS land would be disposed regardless of parcel size and no public land within ACECs and other SMAs would be disposed. Public land may be disposed of through exchange in order to consolidate other public land outside of disposal areas. Only lands within retention areas will be exchanged for lands outside the Resource Area.

Under this alternative, 93,110 acres of State trust land and 56,210 acres of private land would be identified for potential acquisition. All State trust land and private land would be acquired within ACECs and other SMAs. Picacho Peak would also be identified for potential acquisition. If acquired, Picacho Peak might have ACEC potential, so the area would be managed under temporary special management until a decision is made in an RMP Amendment or Revision. The temporary special management would include the following:

- Exclude ROW authorizations
- Manage as VRM Class II
- Limit vehicles to designated roads and trails
- Close to mineral material sales

2. ACECs and Other SMAs

Under Alternative D, 27 areas would be designated as ACECs. The total acreage of the ACECs would be 267,910 acres. Table 2-26 lists the ACECs with their acreages and resource values and Map 2-26 shows the locations of the proposed ACECs. Appendix H-1 contains a general description, management goals, planned actions, and a map for each ACEC.

The Butterfield Trail (15,690 acres) would be designated and managed for historical resources. The Continental Divide National Scenic Trail (48,450 acres) would be designated and managed for scenic resources. These trails are shown on Map 2-11 and discussed in Appendix H-2. The trails would be managed in accordance with the management prescriptions in Appendix H-2.

TABLE 2-26
ACECs - ALTERNATIVE D

ACEC	ACRES	VALUES
Aden Lava Flow	26,250	B,S,G,RES
Alamo Hueco Mountains	16,260	B,S,C,P,SS
Antelope Pass	8,710	B,SS
Apache Box	2,630	B,S,C,SS,RIP
Bear Creek	1,480	RIP
Big Hatchet Mountains	47,180	B,S,SS
Box Canyon	600	B
Central Peloncillo Mountains	12,750	B,S,RES,SS
Cooke's Range	23,160	B,S,C,H
Cowboy Spring	6,740	B,SS
Dona Ana Mountains	1,490	B,S,C
Florida Mountains	22,360	S
Gila Lower Box	6,490	SS,RIP
Gila Middle Box	840	SS,RIP
Granite Gap	1,750	B,S,SS
Guadalupe Canyon	4,170	B,SS,RIP
Kilbourne Hole	5,480	G
Lordsburg Playa	4,510	B
Los Tules	20	C
Northern Peloncillo Mountains	760	B,SS
Old Town	320	C
Organ/Franklin Mountains	56,480	B,S,C,SS,RIP
Paleozoic Trackways	720	P
Rincon	840	C
Robledo Mountains	13,070	B,S
San Diego Mountain	640	C
Uvas Valley	<u>2,210</u>	B
TOTAL ACRES	267,910	

Source: BLM Files, 1990.

Notes: B = Biological; S = Scenic; G = Geological; RES = Research; C = Cultural;
P = Paleontological; SS = Special Status Species; RIP = Riparian;
H = Historical

The following four areas, totalling 34,480 acres, would be proposed for wilderness study (see Map 2-12). These areas would be managed according to the Bureau's Interim Management Guidelines for areas studied under Section 202 of FLPMA until the study is complete, and the areas are either designated as wilderness or released by Congress.

- Organ Needles (7,630 acres)
- Gray Peak (16,080 acres)
- Apache Box (6,300 acres)
- Peña Blanca (4,470 acres)

Appendix I contains the Wilderness Inventory Reports.

The Gila Lower Box (2,480 acres) and the Gila Middle Box (760 acres) (see Map 2-12) would be designated as Wild and Scenic River study areas. Appendix J contains the Wild and Scenic River Report.

3. Vehicle Management

Under Alternative D, vehicle designations would be made for the entire Resource Area as follows:

- Open: 16,190 acres
- Limited to existing roads and trails: 2,371,630 acres
- Limited to designated roads and trails: 539,640 acres
- Closed: 126,360 acres

These areas are shown on Map 2-27.

The areas open to vehicle use would be the Aden Hills Open Area (8,700 acres) and the Lordsburg Playa Open Area (7,490 acres). The support needs for these areas would include a Class 3 cultural survey. The areas limited to designated roads and trails for vehicle use would be all SMAs not designated closed and the Broad Canyon competitive motorcycle race area. The areas closed to vehicle use would be the Mexican border area (89,180 acres), portions of the Organ/Franklin Mountains, Big Hatchet Mountains, and Florida Mountains ACECs (18,900 acres), and the following eight ACECs (18,280 acres):

- Apache Box
- Bear Creek
- Box Canyon
- Gila Lower Box
- Gila Middle Box
- Lordsburg Playa
- Old Town
- Uvas Valley

All other areas would be limited to existing roads and trails for vehicle use.

Exceptions to the vehicle designations may be permitted in writing. Exceptions would be made for public health and safety such as law enforcement and search and rescue, especially along the border. Exceptions for mining operations would be addressed in Plan of Operations, notices, permits, and sales. Exceptions would be made for livestock grazing permittees for emergencies such as emergency feeding, rescue of sick livestock, and emergency fence repairs along the border. Notice would be required within 2 working days of such use. The Border Patrol would be notified immediately for fence repairs along the border. Other exceptions may be permitted in writing for activities such as fence repairs and dirt tank maintenance.

4. Access

Under Alternative D, access would be developed to 19 areas by building new roads, land ownership adjustment, easement acquisition, or condemnation. Emphasis would be on vehicular or pedestrian access depending on the area and resource conflicts. The areas are shown on Map 2-22 and are listed below (the numbers in parentheses are referenced on the map):

Alamo Hueco Mountains (24) - Acquire legal public access for vehicular use to the north boundary of the WSA/ACEC.

Animas Mountains (14) - Acquire legal public access for vehicular use to the boundary of Cowboy Spring WSA/ACEC and to the Gillespie Peak area. Develop physical access for vehicular use to the north end of Animas Mountains from State Road 9.

Apache Box (1) - Acquire legal public access to the boundary (gate).

Bear Creek (2) - Acquire administrative access.

Big Hatchets (23) - Acquire legal public access for vehicular use to the north, east, and west boundaries of the WSA/ACEC (Chaney, Thompson, and Sheridan Canyons).

Burro Mountains (6) - Acquire legal public access for vehicular use (north and south of Gila River).

Cedar Mountains (20) - Acquire legal public access for vehicular use to the boundary of the WSA/ACEC on the north and west sides.

Community Pit No. 1 (36) - Acquire legal access from Shalem Colony Road to public land (approximately ½ mile).

Cooke's Peak (26) - Acquire legal public access for vehicular use on east side (Hadley Draw) and west side (north of Provinger Canyon).

Florida Mountains (28) - Acquire legal public access for vehicular use to the boundary of the WSA/ACEC on the south, east, and west sides (Copper Kettle Canyon, Byer's Spring, and Mahoney Canyon).

Gila Lower Box (5) - Acquire legal public access for vehicular use to the mouth of Nichol's Canyon, Fisherman's Point, and north side.

Gila Middle Box (4) - Acquire legal public access to the boundary on downstream side.

Little Hatchets (19) - Acquire legal public access for vehicular access on the north end.

Organ Mountains (38) - Acquire legal public access for vehicular use south of Soledad Canyon through Anderson, Price, et al.

Peloncillo Mountains (13) - Acquire legal public access for vehicular use to the mouth of Owl Canyon (west side) and north of I-10.

Pyramids (8) - Acquire legal public access for vehicular use into Rockhouse Canyon and southeast part of the Pyramids.

Robledo Mountains (35) - Acquire legal public access across private land for vehicular use on

the north end (via Fred Huff Road or Faulkner Canyon).

San Simon Cienega (9) - Acquire legal public access to north end.

West Potrillo Mountains (40) - Acquire legal public access to north and west sides.

The following criteria would guide prioritization of the areas for access development:

- Public demand
- Administrative needs
- Resource values/conflicts
- Availability of existing access

MANAGEMENT CONCERNS

1. ROWs

Under Alternative D, ROW exclusion areas would be established for 264,870 acres and ROW avoidance areas would be established for 783,400 acres. (See Glossary for definitions of ROW exclusion areas and ROW avoidance areas.) ROW exclusion areas would be all ACECs. ROW avoidance areas would be the following:

- Continental Divide National Scenic Trail
- Butterfield Trail
- Bighorn sheep areas
- VRM Class II areas

The remainder of the Resource Area would be open to the location of ROWs, subject to standard stipulations (1,970,180 acres). Map 2-28 shows the location of the ROW exclusion and avoidance areas.

The BLM would encourage new facilities to be located near existing sites or in existing corridors. For existing corridors within ROW exclusion and avoidance areas, existing uses would be grandfathered and new uses allowed only within existing corridors.

The following special stipulations would apply within avoidance areas under Alternative D:

- Facilities would not be located parallel to the Continental Divide National Scenic Trail or Butterfield Trail within avoidance areas.
- Facilities would not be located within ¼ mile of any stage station on the Butterfield Trail.
- Facilities would not be located in riparian areas.
- Access routes would be limited and considered on a case-by-case basis. In some cases, construction and maintenance activities would need to be done aurally.

2. Minerals

Under Alternative D, the following areas, totalling 64,000 acres, would be withdrawn from locatable mineral entry (see Map 2-29):

- Apache Box ACEC
- Guadalupe Canyon ACEC
- Organ/Franklin Mountains ACEC
- Paleozoic Trackways ACEC

The remainder of the Resource Area would be open to locatable mineral entry, subject to standard mitigating measures.

Under this alternative, all ACECs and the Butterfield and Continental Divide National Scenic Trails would be closed to mineral material disposal (331,950 acres). See Map 2-26. The remainder of the Resource Area would be open to mineral material disposal, subject to standard stipulations. A competitive sale program would be established; the site(s) would be determined later based on mineral surveys and would probably be within 10 miles of Las Cruces. Miscellaneous negotiated sales would be continued.

Under Alternative D, 266,950 acres would be closed to fluid mineral leasing (see Map 2-26). This would include all ACECs, in addition to the existing closed areas. The current stipulations for fluid mineral leasing would continue (274,000 acres). About 65,000 acres would be open to leasing with no surface occupancy. The remainder of the Resource Area would be open to mineral leasing, subject to standard terms and conditions: oil and gas, 3,532,300 acres; and geothermal and nonenergy leasables, 3,499,500 acres.

The following mitigating measures would be applied to lands open to locatable (under Plan of Operations only), saleable, or leasable mineral entry:

- Riparian areas would not be disturbed.
- Activities on critical soils on slopes over 20 percent would require special mitigation.

3. Recreation

Under Alternative D, the following new SRMAs would be designated (see Map 2-7):

- Dona Ana Mountains
- Fort Cummings

An RAMP would be prepared for the Dona Ana Mountains SRMA. The Fort Cummings SRMA would be managed in accordance with the existing Cultural Resource Management Plan.

Management of the two existing SRMAs would continue. The Organ Mountains SRMA would continue to be managed in accordance with the Organ Mountains Coordinated Resource Management Plan and the Gila Lower Box SRMA would continue to be managed in accordance with the Gila River Coordinated Resource Management Plan.

The focus of interpretive and educational efforts would be on ACECs where this is part of the management prescription for the ACEC (see Appendix H-1).

The remainder of the Resource Area would be managed primarily for dispersed recreation opportunities.

4. Cultural and Paleontological Resources

The following objectives and actions would be implemented to resolve the cultural and paleontological resources management concern:

- Manage for information potential (data retrieval, research)
- Manage for public values (interpret)
- Manage for conservation (future use)

Table 2-27 identifies the actions that would be implemented to achieve each objective.

Under Alternative D, the following cultural and paleontological areas would be designated as ACECs (see Issue 2, ACECs and Other SMAs):

- Alamo Hueco Mountains
- Apache Box
- Cooke's Range
- Dona Ana Mountains
- Los Tules
- Old Town
- Organ/Franklin Mountains
- Paleozoic Trackways
- Rincon
- Robledo Mountains
- San Diego Mountain

The ACECs would be managed in accordance with the management prescriptions listed in Appendix H-1. Interpretation for tourism would be provided at Fort Cummings (Cooke's Range ACEC), the Massacre Peak Petroglyphs (Cooke's Range ACEC), and the Paleozoic Trackways, with emphasis on passive interpretation such as signing.

The Butterfield Trail (15,690 acres) would be designated as historic trail and managed for its historical resource values (see Issue 2, ACECs and Other SMAs). Interpretation for tourism would be provided at the Butterfield Trail stage stops, with emphasis on facilities for interpretation.

Site management in the Organ Mountains (Organ/Franklin Mountains ACEC), at Fort Cummings (Cooke's Range ACEC), and along the Butterfield Trail would continue in accordance with the existing Coordinated or Cultural Resource Management Plans for those areas.

5. Wildlife Habitat

Under Alternative D, new HMPs would be developed in the Columbus area, the Cooke's Range/Nutt area, the Robledo Mountains, the Uvas Mountains, the Cedar Mountains, and the West Potrillo Mountains (see Map 2-8). Table 2-28 lists these areas with the priority species, objectives, population goals, and actions. Management of existing HMPs would continue.

All HMPs would incorporate the following:

- Obtain production (population) data to correlate with monitoring (at a minimum, harvest information by area)
- Monitoring emphasis would be on preferred habitats for wildlife
- Monitoring would incorporate browse utilization/condition/trend

Animal damage control (ADC) actions would be conducted in accordance with annual ADC plans. The plan would consider SMAs (such as WSAs, ACECs) specifying times and conditions for control activities in accordance with management prescriptions, objectives, and goals for each area.

6. Soil, Air, and Water

The objective of the watershed management program would be to reduce soil erosion and improve water quality (nonpoint source pollution), with emphasis on critical soil areas. Critical soils on 0-10 percent slopes would be first priority for land treatments and grazing management to reduce erosion and improve water quality. Critical soils on slopes over 10 percent would be first priority for grazing management to reduce erosion and improve water quality.

Watershed management plans would be developed for the following areas:

- Starvation/China Draw (southeast side of Cooke's Range)
- Mashed O (north side of Cedar Mountains)
- Alamo Hueco/Big Hatchet Mountains (east side)
- Corralitos
- Gila River (Virden to Middle Box, north and south; would include provisions of existing Gila River Coordinated Resource Management Plan)
- Rincon/Hatch (both sides of river)
- Pyramids
- Uvas Valley

The criteria for identification of the areas include nonpoint source impaired watersheds, vegetation, slope, and critical soils. The locations of the areas are shown on Map 2-16.

TABLE 2-27
MANAGEMENT OBJECTIVES ACHIEVED BY PLANNED ACTIONS
ALTERNATIVE D

ACTIONS	INFORMATION	PUBLIC VALUES	CONSERVATION
Eliminate livestock grazing (Old Town, Fort Cummings, and Dripping Springs Natural Area in accordance with Cultural Resource Management Plans and ACEC management prescriptions).	X	X	
Class III inventories (Fort Cummings, San Diego Mountain, Pony Hills, and Rincon ACECs).	X	X	
Research historic trails and roads (Camino Real, Santa Rita Copper Trail, Spanish exploration routes, and historic wagon roads).	X	X	
Research historic mining features (Town of Cooke, Jose, Stephenson-Bennett, Modoc, Tres Hermanas, Pyramids, Pinos Altos, Peloncillos, Floridas, Town of Carlise/Summit).	X	X	
Research/field schools (Old Town, Bruton Bead, Indian Basin, East Potrillo, South Florida, Camp Cody sites).	X	X	
Restrict public access to the following rockshelters: Apache Box, Apache Cave, Stein's Cave and elsewhere as needed.	X		X
Acquire Butterfield Trail stage stations	X	X	
Manage Old Town/Pony Hills sites in accordance with Mimbres Culture Study legislation if it is passed.	X	X	X
Close road to Bruton Bead site.	X		X
Fence/cover with sterile fill the Los Tules site.			X
Transfer BLM portion of Redrock cemetery to NPS.	X	X	
Implement provisions of Paleozoic Trackways Study legislation.	X	X	
Encourage paleontological studies of Robledo Mountains, Aden Lava Flow, and Alamo Hueco Mountains.	X	X	

Source: BLM Files, 1990.

TABLE 2-28
WILDLIFE HMPs
ALTERNATIVE D

HMP AREA	PRIORITY SPECIES	OBJECTIVES	POPULATION GOALS (MINIMUM)	ACTIONS
Columbus	Antelope ^{a/}	Transplant/ introduce	50	Fence modification. Reserve 50 AUMs forage.
Cooke's Range/Nutt	Deer/Antelope ^{a/}	Deer: improve habitat Antelope: trans- plant/introduce	Deer: 400 Antelope: 100	Fence modification. Water development. Prescribed burning.
Robledo Mountains	Deer/Antelope ^{a/}	Deer: improve habitat Antelope: trans- plant/introduce	Deer: 400 Antelope: 50	Fence modification. Water development.
Las Uvas Mountains	Deer	Improve habitat	300	Water development.
Cedar Mountains	Deer/Antelope ^{a/}	Deer: improve habitat Antelope: trans- plant/introduce	Deer: 300 Antelope: 100	Fence modification. Water development.
West Potrillo Mountains	Deer/Quail	Deer: improve habitat Quail: improve or enhance habitat	Deer: 300	Water development. Exclosures near water.
Organ/Franklin Mountains ^{b/}	Deer/Bighorn		Deer: 500 Bighorn: 100	Prescribed burning. Water development.
Florida Mountains ^{b/}	Deer/Bighorn		Deer: 500 Ibex: 400	Prescribed burning. Water development.
Big Hatchet/Alamo Hueco Mountains ^{b/}	Bighorn/Deer		Bighorn: 750 Deer: 500	Prescribed burning. Fence modification.
Peloncillo Mountains ^{b/}	Bighorn/Deer		Bighorn: 400 Deer: 750	Fence modification.

Source: BLM Files, 1990, New Mexico Department of Game and Fish, 1990.

Notes: ^{a/}Antelope objectives and goals contingent on habitat inventory.
^{b/}Existing HMP.

The focus for management of air quality and efforts to secure guaranteed instream flow would be in ACECs where this is part of the management prescription for the ACEC (see Appendix H-1).

Provisions for erosion control and air quality protection would continue to be incorporated into all surface-disturbing actions.

7. Vegetation

Vegetation Sale Areas

The existing sale areas would be retained and expand into adjacent lands identified for disposal as needed. A new sale area would be developed between Deming and Lordsburg.

Desired Plant Communities

The desired plant community concept is defined as a plant community that produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the land use plan goals and activity plan objectives established for the site. The desired plant community becomes the vegetation management objective for the site. The desired plant community must be consistent with the site's capability to produce the identified community through land treatments such as prescribed fire and chemical brush control and through prescribed grazing management under this alternative. Under this alternative, utilization of black grama would not exceed an average of 40 percent. See Table 2-29 and Appendix D. Maps showing desired plant communities are available for review in the Mimbres Resource Area Office.

Land Treatments

Grass upland areas would be treated mainly through prescribed grazing management (grazing systems). Grass bottomlands, mixed desert shrub (>10 percent slope), snakeweed, and mountain brush types would be treated using combinations of prescribed burning, prescribed natural fire, and prescribed grazing management. Creosotebush, mesquite, and mixed desert shrub (<10 percent slope) would be treated almost entirely by the use of chemical herbicides such as pelleted Spike 20P (Tebuthiuron). Usually only areas 2 sections in size or greater (1,240 acres) would be treated.

Isolated areas smaller than 1,240 acres would not be treated. Areas over 10 percent slope and within 6 miles of a perennial stream would also not be treated chemically. The use of chemical treatments is also presently excluded on the following range sites: bottomland, draw, clay, salt flats, salty bottomland, igneous hills, limestone hills, malpais, and breaks. These are mostly found in low-lying areas or in areas over 10 percent slope. Prescribed fire or prescribed grazing management would be used to maintain these areas to the extent possible. Fire suppression would play a major role in maintaining pinon-juniper, oak woodland, and conifer types, except where prescribed natural fires may benefit these areas (such as low intensity ground fires where scorch heights are low enough to prevent damage to trees). Table 2-30 summarizes land treatments for specific plant communities. See Map 2-17.

All areas treated by prescribed burning, prescribed natural fire or chemical herbicides would be rested from grazing for at least 2 growing seasons (in areas where livestock use occurs). Exceptions would be in grass bottomlands where grazing would be allowed after 4 inches of regrowth. Any increase in forage would be reserved for livestock, wildlife, and watershed in accordance with management goals, objectives, and prescriptions for wildlife HMPs, livestock AMPs or grazing activity plans, and watershed activity plans for specific areas. Prescribed burn plans and EAs would be developed for specific areas prior to the use of prescribed burning or prescribed natural fires. Treatment plans and EAs would be prepared for specific chemical treatment areas prior to herbicide application.

Livestock Grazing

Under Alternative D, livestock grazing would be eliminated on a total of 8,026 acres, including the Red Rock Game Farm (1,100 acres), the Central Peloncillo Mountains ACEC (4,446 acres), the proposed Bear Creek ACEC (1,480 acres), and the Organ Mountains (1,000 acres).

Fragile Lands

The fragile land areas described on Map 2-18 would receive high priority for AMP or other activity plan revision or development, allotment monitoring, land treatments, allotment re-

TABLE 2-29
DESIRED PLANT COMMUNITY OBJECTIVES^{a/}
ALTERNATIVE D

PLANT COMMUNITY	% GRASS	% SHRUBS	% FORBS	ACREAGE
Creosotebush	40-60	20-30	20-30	695,240
Creosotebush ^{b/}	0-10	80-100	0-10	339,210
Mesquite	50-65	15-25	30-50	577,200
Mesquite ^{b/}	0-10	80-100	0-10	138,680
Snakeweed	60-75	10-15	10-30	438,830
Mixed Desert Shrub (<10% slope)	55-75	15-20	10-20	183,200
Mixed Desert Shrub (>10% slope)	20-30	40-60	20-30	203,940
Mountain Brush	35-55	30-40	20-30	158,630
Pinyon-Juniper/Oak Woodland/Conifer	0-30	40-70	0-30	59,350
Grass Bottomlands	70-80	10-20	10-20	571,880
Grass Uplands	65-80	20-30	15-30	696,190
Riparian	30-80 (grass or grasslike)	40-60 (woody veg)	30-60	4,600
Arroyo	0-15	40-70	18-20	21,050

Source: BLM Files, 1990.

Notes: ^{a/} Specific species will be identified for each plant community at the activity planning level.
^{b/} These brush types would remain unchanged because they fall in the buffered area along perennial streams or are above the 0-10 percent slope contour and would not be treated chemically. These areas would generally not respond positively to changes in grazing management alone.

TABLE 2-30
LAND TREATMENTS
ALTERNATIVE D

PLANT COMMUNITY	AC. BURN	AC. CHEMICAL TREATMENT	PURPOSE
Creosotebush	N/A	533,200	Wildlife, watershed, forage production
Mesquite	N/A	425,700	Wildlife, watershed, forage production
Mixed Desert Shrub (<10% slope)	N/A	121,610	Wildlife, watershed, forage production
Mixed Desert Shrub (>10% slope)	86,830	N/A	Wildlife, watershed, forage production
Mountain Brush	141,510	N/A	Wildlife, watershed, forage production
Snakeweed	281,250	N/A	Wildlife, watershed, forage production
Grass Bottomlands	168,550	N/A	Improve plant vigor, reduce shrub invasion, increase forage and palatability
Grass Uplands	Undetermined- used as needed	N/A	Wildlife, watershed, control shrub invasion
TOTALS	677,690	1,080,530	

Source: BLM Files, 1990.

categorization, and possible reduction or exclusion of surface disturbing activities including range improvement development and livestock grazing use. Efforts would be directed towards improving range condition and reaching Desired Plan Community objectives within these areas. Fragile land areas within ACECs would receive the highest priority for improved management.

8. Riparian and Arroyo Habitat

Under Alternative D, riparian habitat in the following areas would be included in the ACEC designations proposed under Issue 2, ACECs and Other SMAs:

- Apache Box
- Bear Creek
- Gila Lower Box

- Gila Middle Box
- Guadalupe Canyon
- Organ/Franklin Mountains

The ACECs would be managed in accordance with the management prescriptions listed in Appendix H-1.

Management of the riparian resources in the Gila Lower Box, the Organ Mountains, and the San Simon Cienega would continue in accordance with the existing management plans for those area. Instream flows for the Gila Lower and Middle Box ACECs would be secured when State law allows. The Placitas Arroyo Riparian Demonstration Area would continue as a riparian SMA.

9. Special Status Species

9. Special Status Species

Under Alternative D, special status species in the following areas would be included in the ACEC designations proposed under Issue 2, ACECs and Other SMAs:

- Alamo Hueco Mountains
- Antelope Pass
- Apache Box
- Big Hatchet Mountains
- Central Peloncillo Mountains
- Gila Lower Box
- Gila Middle Box

- Granite Gap
- Guadalupe Canyon
- Northern Peloncillo Mountains
- Organ/Franklin Mountains

The ACECs would be managed in accordance with the management prescriptions listed in Appendix H-1.

Management of special status species in the Organ Mountains would continue in accordance with the existing Organ Mountains Coordinated Resource Management Plan.

CHAPTER 3

CHAPTER 3 AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes those physical, biological, social and economic characteristics of the Mimbres Resource Area which affect or are affected by the resolution of the four issues and nine management concerns identified in Chapter 2. Much of the information in this chapter summarizes more detailed material which is contained in the Management Situation Analysis (MSA) for the Mimbres Resource Area and is available for review at the Mimbres Resource Area Office. The Existing Management Situation (EMS) and the Resource Area Profile (RAP) sections of the MSA are in-depth discussions of the environment in the Mimbres Resource Area.

TOPOGRAPHY

The Mimbres Resource Area lies within the Basin and Range physiographic province. Typical landforms include rugged and steep fault-block mountain ranges, broad basins, and volcanic uplands. Major topographic features include: the Organ Mountains, Florida Mountains, West Potrillo Mountains, Big and Little Hatchet Mountains, Animas Mountains, Peloncillo Mountains, Cedar Mountains, and Cooke's Range. In contrast to these ranges are broad valleys including the Animas Valley, Playas Valley, Hachita Valley, Mesilla Bolson, and the Rio Grande/Mesilla Valley.

Elevations on BLM-administered public land range from a low of approximately 3,800 feet (1,141 m) above mean sea level in the southern Mesilla Valley to a high of 9,012 feet (2,706 m) at Organ Needle in the Organ Mountains. Average elevation is about 5,000 feet (1,501 m).

CLIMATE

The Mimbres Resource Area is characterized by an arid to semiarid continental climate, with mild winters and pleasant to hot summers. Average annual precipitation in the area ranges from 8 to

10 inches at elevations below 6,000 feet, and from 14 to 16 inches at higher elevations. A wide variation in annual totals is characteristic of arid climates as illustrated by annual extremes of 18.8 inches and 4.4 inches at Lordsburg during a 56 year period of record. More than half the yearly precipitation falls during July, August, and September when moist air masses move into the area from subtropical areas. Rainfall during this period is from convective thundershowers that are commonly intense and of short duration. Fall, winter, and spring are relatively dry seasons, influenced primarily by air masses moving across the area from the Pacific Ocean.

The average annual temperature in the Resource Area is about 60°F. During the summer months, daytime temperatures sometimes exceed 100°F. The average maximum temperature during July, the warmest month, is near 95°F. In January, the coldest month, the average monthly minimum temperature is in the middle 20's. Through the year, a daily range of 30° or more is common, which is characteristic of southern desert climates.

Wind speeds average about 6 miles per hour (mph) throughout the Resource Area. During the summer months, the prevailing wind direction is from the southeast. Brief, strong winds often accompany convective thundershowers during the summer months. In the winter, the prevailing wind direction is mostly from the north as Arctic air enters the area from the Pacific Northwest. The spring months (March-May) are commonly referred to as the windy season when dry, gusty winds predominate from the west in excess of 30 mph. The gusty winds coupled with dry soils occasionally cause severe afternoon dust storms.

Characteristic of desert climates, evaporation greatly exceeds the annual precipitation. Evaporation loss from water surfaces is about 75 inches per year. This affects plants by depleting available moisture for plant growth and maintenance, especially during dry periods.

MINERALS

The Resource Area is characterized by extensive volcanic rocks, igneous intrusions, fault-block mountain ranges, deep intermontane basins, and the Rio Grande rift. The northwestern portion of the Resource Area is in the transition zone between the Colorado Plateau and the Basin and Range provinces.

Basalt cinder cones and lava flows are prevalent in the West Potrillos, Aden Crater, Sierra de las Uvas, and the Animas Valley. Other volcanic rocks (rhyolite, andesite, dacite, and latite) are common throughout the area. Intrusive igneous rocks occur in the Organ Mountains, Dona Ana Mountains, Cooke's Range, Tres Hermanas Mountains, Florida Mountains, Pyramid Mountains, Little Hatchet Mountains, Animas Mountains, and Peloncillo Mountains. Many of these areas are mineralized and contain historic mining districts.

Sedimentary rocks of marine origin are common in the fault-block ranges. The most prominent exposures occur in the East Potrillo Mountains, Robledo Mountains, San Andres Mountains, and Big Hatchet Mountains. The deep basins between these fault-block mountains have potential for oil and gas.

The Resource Area is structurally complex. The most significant structural feature is the Rio Grande rift which is a tensional feature in the Earth's crust. The rift extends from southern Colorado to Texas. Geothermal energy is associated with the abnormally high subsurface temperatures that occur in the rift.

Leasables

The potential for occurrence of oil and gas within the Resource Area is concentrated within the deep intermontane basins and in the Pedregosa Basin in extreme southwestern New Mexico. Table 3-1 lists the acreage for areas of high, moderate, and low potential. Also see Map 3-1.

Possible oil and gas accumulations occur in the deep intermontane basins of the Resource Area. The Pedregosa Basin, which extends from Mexico into southwestern New Mexico, is of special interest. There are structural similarities between this area and the overthrust belt of the northern

Rocky Mountains where important petroleum discoveries have been made.

The Resource Area is relatively unexplored compared to the producing oil and gas fields of northwestern and southeastern New Mexico. Extensive geophysical exploration occurred throughout the Resource Area between 1975 and the early 1980s. Several wildcat wells were also drilled during this period. There has been no exploration in recent years.

TABLE 3-1
OIL AND GAS POTENTIAL FOR OCCURRENCE
(Acres)

POTENTIAL	ALL LANDS	FEDERAL OIL AND GAS ESTATE*
High	0	0
Moderate	3,741,100	2,216,900
Low	5,344,100	2,498,800

Source: BLM Mimbres Resource Area GIS Data, 1990.

Note: * Does not include U.S. Forest Service.

There are three general areas of high geothermal potential: (1) the Animas Valley south of Lordsburg, (2) the Rio Grande rift, and (3) the Silver City vicinity. Potential acreage is listed in Table 3-2.

There are two areas classified by the BLM as Known Geothermal Resource Areas (KGRAs): the Lightning Dock KGRA in the Animas Valley south of Lordsburg and the Radium Springs KGRA north of Las Cruces. There is a known geothermal field east of Las Cruces but the area has not yet been classified as a KGRA by the BLM.

Two commercial greenhouses are being heated with hot water in the Animas Valley. There is a commercial greenhouse at Radium Springs. New Mexico State University (NMSU) in Las Cruces utilizes geothermal energy for space heating, domestic water heating, the heating of swimming pools, and the heating of a greenhouse.

Extensive geothermal exploration between 1975 and 1983 led to discoveries at Radium Springs and Las Cruces. Currently, the only exploration being conducted in the Resource Area is by the

Southwest Technology Development Institute at NMSU. They are continuing their efforts to delineate areas of geothermal potential by using geophysical techniques and by drilling temperature-gradient holes.

TABLE 3-2
GEOTHERMAL POTENTIAL FOR OCCURRENCE
(Acres)

POTENTIAL	ALL LANDS	FEDERAL GEOTHERMAL ESTATE*
High	96,200	59,400
Moderate	656,800	253,400
Low	8,332,200	4,370,100

Source: BLM Mimbres Resource Area GIS Data, 1990.

Note: * Does not include U. S. Forest Service.

The only other leasable minerals with potential for occurrence in the Resource Area are potassium and sodium. The potassium-bearing mineral, alunite, occurs in volcanic rocks in the Steeple Rock area about 40 miles northwest of Lordsburg. The alkali playas west of Lordsburg are a potential source of sodium sulphate deposits. Table 3-3 summarizes the potential acreage for nonenergy leasable minerals in the Resource Area.

TABLE 3-3
NONENERGY LEASABLE MINERALS POTENTIAL
FOR OCCURRENCE
(Acres)

POTENTIAL	ALL LANDS	FEDERAL MINERAL ESTATE*
High	0	0
Moderate	18,900	15,400
Low	9,066,300	4,667,500

Source: BLM Mimbres Resource Area GIS Data, 1990.

Note: * Does not include U. S. Forest Service.

Locatables

Locatable minerals occur in most of the mountain ranges throughout the Resource Area. Mining districts are also associated with these mountain ranges. Most of the districts were active in the late 1800's and the early 1900's. Mining districts

in the Organ Mountains, Cooke's Range, Florida Mountains, Little Hatchets, Pyramid Mountains, and other areas have colorful histories and were important producers of gold, silver, copper, lead, zinc, fluorspar, barite, and manganese. The Resource Area contains many of the minerals listed on the National Stockpile Inventory of Strategic and Critical Minerals.

Many of the mining districts contain deposits that are not currently economic to mine. However, these deposits could become economic with a rise in mineral commodity prices or if the United States' sources for strategic or critical minerals are no longer accessible.

The mineral resources that have been produced in the Resource Area include gold, silver, copper, lead, zinc, molybdenum, manganese, tungsten, and iron. The nonmetallic minerals that have been produced include fluorite, barite, gypsum, and silica. Table 3-4 lists the acreage of high, moderate, and low potential. Also see Map 3-2.

TABLE 3-4
LOCATABLE MINERALS POTENTIAL FOR OCCURRENCE
(Acres)

POTENTIAL	ALL LANDS	FEDERAL MINERAL ESTATE*
High	113,000	52,100
Moderate	540,500	313,600
Low	8,431,700	4,317,200

Source: BLM Mimbres Resource Area GIS Data, 1990.

Note: * Does not include U. S. Forest Service.

Salables

The salable minerals in the Resource Area include sand, gravel, volcanic cinders, building stone, and other mineral materials such as clay, caliche, and rock that is used for aggregate. Sand and gravel deposits are most abundant along the Rio Grande Valley. Volcanic cinders occur in the West Potrillo Mountains. The Rebledo Mountains contain deposits of building stone. Clay deposits occur in southern Dona Ana County. Caliche is common throughout the Resource Area. Table 3-5 lists the acreage for areas of high, moderate, and low potential. Also see Map 3-3.

TABLE 3-5
SALABLE MINERALS POTENTIAL FOR OCCURRENCE
(Acres)

POTENTIAL	ALL LANDS	FEDERAL MINERAL ESTATE*
High	85,200	62,900
Moderate	276,500	203,800
Low	8,723,500	4,416,200

Source: BLM Mimbres Resource Area GIS Data, 1990.

Note: * Does not include U. S. Forest Service.

LANDS

The BLM administers approximately 3,053,820 acres of public land in Dona Ana, Luna, Hidalgo, and Grant Counties in southwestern New Mexico. Public land comprises about 34 percent of the total surface ownership within the Mimbres Resource Area. In addition to the surface ownership, BLM also administers approximately 4,126,780 acres of Federal mineral estate. See Table 3-6 and Visual A in map pocket.

The Mimbres Resource Area is characterized by its rural qualities, vast open spaces, and generally sparse population. However, a large and expanding urban population exists along the Rio Grande and Mesilla Valleys from Las Cruces to El Paso. Other populated areas include Deming, Lordsburg, and Silver City.

The urban populations, particularly in the Rio Grande and Mesilla Valleys, put a great demand on nearby public land to provide for the needs of these growing communities. The Continuing Management Guidance section (in Chapter 2) describes the current number of actions facing the lands program on an annual basis. These are expected to increase. Typical actions and authorizations include leases, permits, exchanges, communication site rights-of-way, linear rights-of-way, and recreation and public purpose (R&PP) leases and patents for cemeteries, gun clubs, parks, and school sites.

Many of the linear facilities authorized under various right-of-way grants have led to the establishment of defacto right-of-way corridors. Seven officially designated corridors also exist as a result of previous MFPs. The placement of

facilities has in the past been largely due to topographic and land status constraints.

ACCESS

Existing transportation routes include Interstates 10 and 25, U.S. Highways 70, 80 and 180, and State Roads 9, 11, 26, 81, 90, 146, 338, and 464. In addition to the major State and Federal highways, numerous county roads traverse nearly all portions of the Mimbres Resource Area.

Traditionally, BLM's transportation network utilizes the Federal, State, and County road systems. The Easement Acquisition Program within the Mimbres Resource Area has been relatively inactive, largely due to a lack of past planning to support an acquisition program and because of minimal funding. In addition to the Federal, State, and County road system, BLM developed and maintains the 5.5-mile long Aguirre Spring Recreation Area access road, the 4.5-mile Pine Tree Trail, and the 6-mile Baylor Pass Trail. BLM also recently acquired and maintains approximately 3 miles of roads and trails in the Dripping Springs Natural Area.

Access concerns have steadily increased over recent years as the demand for access and use of public land has increased.

LIVESTOCK GRAZING

There are 347 grazing allotments within the Dona Ana, Grant, Luna, and Hidalgo County Area. Of these, 199 are within the grazing district boundary and have set grazing capacities for each allotment (Section 3). Grazing use on these allotments is covered by a permit. The remaining allotments are outside the grazing district boundary, where grazing use is covered by a lease (Section 15). Livestock, owned by 213 livestock operators, utilize the forage on these permits and leases. Approximately 20 allotments located within Hidalgo County are administered by the BLM Safford District Office located in Safford, Arizona. These allotments are administered under a Memorandum of Understanding (MOU) between the Safford and Las Cruces Districts. The MOU also provides for the administration of a portion of one allotment located in Cochise County, Arizona by the Mimbres Resource Area. Fenced allotments contain intermingled unfenced parcels of State trust, private (controlled and

TABLE 3-6
LAND STATUS
(In Acres)

LANDHOLDER/MANAGER	DONA ANA	LUNA	HIDALGO	GRANT	TOTAL
<u>SURFACE ESTATE</u>					
BLM	1,126,270	759,220	850,210	318,120	3,053,820
Forest Service	0	0	75,540	866,660	942,200
National Park Service	52,600	0	0	0	52,600
Military Withdrawal	503,560	2,070	0	1,670	507,300
Other Withdrawn land	155,840	630	12,210	24,440	193,120
State trust	287,500	549,560	373,880	352,190	1,563,130
Private	315,420	586,340	893,330	977,910	2,773,000
TOTAL	2,441,190	1,897,820	2,205,170	2,540,990	9,085,170
<u>MINERAL ESTATE</u>					
BLM Administered					
All Minerals	1,416,850	884,090	1,134,470	691,370	4,126,780
Coal Only	0	0	0	0	0
Oil, Gas and Coal Only	0	0	0	0	0
Oil and Gas Only	3,940	12,790	10,840	5,170	32,740
Other	6,610	1,710	80	830	9,230
National Park Service	52,600	0	0	0	52,600
USFS Administered	0	0	75,540	857,940	933,480
WSMR Administered	503,550	0	0	0	503,550
No Federal Minerals	457,640	999,230	984,240	985,680	3,426,790
TOTAL	2,441,190	1,897,820	2,205,170	2,540,990	9,085,170

Source: Mimbres Resource Area Geographic Information System Data, 1990.

uncontrolled), and public lands. A few allotments also include Forest Service land. Most of the allotments are divided into pastures with water developments in each pasture. Water developments, which constitute base property in New Mexico, are usually located on the State trust and private lands. Numerous rangeland improvement projects such as fences, pipelines, wells, storage tanks, corrals, brush control projects, authorized by rangeland improvement permits or cooperative agreements, are located on public land.

There are 21 allotments in the Resource Area which have implemented Allotment Management Plans (AMPs). AMP allotments are on a deferred rotation grazing schedule set up in cooperation with the individual permittee. The schedules allow for deferment on one or more pastures for a growing season or complete year's rest. Yearlong grazing has been the common practice in the past but many ranches are now practicing some type of rotation system. Activity plans, which include a grazing system are being developed on 25 additional allotments.

There are 385,282 animal unit months (AUMs) of licensed grazing use in the Mimbres Resource Area. Grazing use consists of cattle and a few saddle horses on each allotment. Cow-calf operations are common with a few operators grazing steers. Common breeds of livestock are Hereford, Brangus, and Angus. Crossbreeding of livestock has improved calf crop, calving weights, and has developed cattle which are doing well in our arid Southwest.

Of the 3 million acres of public land in the Resource Area, approximately 90 percent can be grazed by livestock. The remaining 10 percent is considered unsuitable due to steep slopes (greater than 70 percent) or barren areas (less than 2 percent vegetation).

VEGETATION

The vegetation in the Mimbres Resource Area varies greatly in its diversity, production, and potential due to differences in elevation, climate, soils, and topography. The Resource Area exhibits influences from the Chihuahuan Desert, Sonoran Desert, Mexican Highlands, Southern Rocky Mountains, and the Mogollon Plateau. A general description of the vegetation in the Mimbres Resource Area was gathered and

compiled from the range surveys and range site mapping done in the late seventies and early eighties.

Existing plant communities and their percentage are shown in Table 3-7.

Major Land Resource Areas

The Mimbres Resource Area contains portions of two Major Land Resource Areas (MLRAs). The two MLRAs are the Southern Desert-Subresource Area SD-2 (MLRA 42) and the Western Plateau-Subresource Area WP-3 (MLRA 36). MLRAs cover large geographic areas and present a general description of the vegetation community potentially found within each area. Maps of vegetation and range sites are available for review in the Mimbres Resource Area Office.

The Southern Desert MLRA is characterized by elevations of 3,800 to 5,000 feet with mountain areas up to 8,000 feet. Gently sloping plains are broken by abrupt rising desert mountains. Climate in the warm, arid region is characterized mostly by summer precipitation with an annual rainfall of 8 to 10 inches. Average annual temperature is 60°F with extremes of 5° below zero in the winter and 110°F in the summer. Potential natural vegetation on these soils will support grassland (short, mid, and tall grass) and grass-shrubland vegetation. In the Resource Area, 89 percent or approximately 2,670,000 public land acres are in this MLRA.

The Western Plateau MLRA, characterized by elevations of 5,000 to 6,500 feet, is associated with general foothill topography with numerous canyons and dry washes adjacent to mountains. Annual precipitation is 12 to 16 inches. Average annual temperature is 56°F with extremes of 12° below zero in the winter to 103°F in the summer. Potential natural vegetation on these soils will support grassland vegetation. In the 4-County Area, 11 percent or approximately 330,000 public land acres are in this MLRA.

A more detailed description of these MLRAs can be found in the Soil Conservation Service Range Site Descriptions, Section II E, Technical Guides.

The Southern Desert MLRA covers 16 different range sites with 30 vegetation subtypes present. The six major range sites are gravelly, igneous hills, sandy, loamy, gravelly loam, malpais, and

TABLE 3-7
EXISTING PLANT COMMUNITIES

PLANT COMMUNITY	% GRASS	% SHRUBS	% FORBS	ACREAGE
Creosotebush	0-10	80-100	0-10	1,091,960
Mesquite	0-10	80-100	0-10	713,960
Snakeweed	50-60	20-30	30-40	443,090
Mixed Desert Shrub* (<10% slope)	0-15	60-90	20-30	183,200
Mixed Desert Shrub (>10% slope)	20-30	40-60	10-30	203,940
Mountain Brush	35-55	30-40	20-30	158,630
Pinyon-Juniper/Oak Woodland/Conifer	0-30	40-70	0-30	59,350
Grass Bottomlands	70-80	10-20	10-20	572,540
Grass Uplands	65-80	20-30	15-30	676,270
Riparian	30-80 (grass or grasslike)	40-60 (woody veg)	30-60	4,600
Arroyo	0-15	40-70	10-20	21,160

Source: BLM Files, 1990.

Note: *The mixed desert type includes the tarbush, catclaw, white thorn, mariola, and mixed desert shrub sub-types.

clayey. All seven major vegetation subtypes (creosotebush, midgrass, snakeweed, mixed desert shrub, mesquite, mixed mountain shrub, and tarbush) are present on the major range sites.

The Western Plateau MLRA covers 10 different range sites with 15 vegetation subtypes present. The major range site is hills. The major vegetation subtypes are midgrass, mixed mountain shrub, creosotebush, and pinyon-juniper.

Gravelly range sites occur along the footslopes of desert mountains and side slopes of arroyos and water courses. The landscape is characterized by low hills, ridges, fans, and footslopes with 5 to 30 percent slope. Creosotebush is the dominant vegetation on the gravelly range site. Small amounts of midgrasses (grama grasses and tobosa) also occur on gravelly sites.

The igneous hills range site is characterized by rolling to steep hills and mountain footslopes. Slopes average from 15 to 50 percent while direction of slope is variable. Midgrass and mixed mountain shrub are the dominant vegetation subtypes on these areas. Midgrasses are the most productive subtype. Major midgrass species include grammas, muhlys, and in smaller amounts, threeawns, tobosa, panicums, bluestems, and lovegrasses. Mixed mountain shrubs include oak brush, mountain mahogany, juniper, sumac and small amounts of other species.

Sandy range sites usually occur on level to gently sloping or undulative piedmont slopes or plains. Slopes range from 1 to 15 percent, averaging less than 10 percent. Snakeweed and mesquite are the dominant vegetation subtypes on these areas. Mesquite, the co-dominant on this range site, is

usually in the sand dunes with snakeweed occurring in the interdune areas. Small amounts of midgrasses (dropseeds and tobosa) occur in association with mesquite and snakeweed.

Loamy range sites are found on piedmont slopes. Slopes range from 1 to 15 percent, but are usually less than 10 percent. Snakeweed and midgrass are the dominant vegetation subtypes on this range site. Midgrass species (gramas, muhlys, tobosa, and threeawns) occur in the same associations as found in the hills range site.

The gravelly loam range site is characterized by nearly level to rolling piedmont slopes and alluvial fans. Slopes occasionally reach 30 percent but average less than 15 percent. Midgrass, mesquite, creosotebush and snakeweed are the dominant vegetation subtypes. Midgrasses include gramas, muhlys with tobosa and threeawns are also present. The remaining three shrub types have all invaded into this potentially productive range site.

The malpais range site varies considerably from nearly level to moderately steep with small areas exceeding 25 percent slope. The terrain is frequently interrupted by basalt outcrops, rocks, and occasional boulders. The site may occur on nearly level mesa tops, valley lava flows, or on hills which are usually old volcanic cones. Dominant vegetation types include midgrass, creosotebush, and mixed desert shrub. Midgrass species include gramas, muhlys, tobosa, tridens, and other associated species. The mixed desert shrub type includes creosotebush, four-winged saltbush, snakeweed with various cacti, and yucca thrown in.

Fragile Lands

Fragile lands are areas of vegetation in poor or fair range condition, that occur on areas of critical soils (range sites with high production and erosion potential). This information is based on range inventories which included range site and vegetation mapping done from 1978 to 1981. These areas have the potential to respond favorably to changes in management, including restriction or exclusion of surface-disturbing activities. At the time of the range surveys, there were approximately 800,000 areas in poor condition and 800,000 acres in fair condition that met these criteria. See Map 2-18.

SOIL, AIR, AND WATER

Soil

SOIL SURVEYS

There are four existing soil surveys which cover the land within the Mimbres Resource Area. These surveys were conducted cooperatively by the USDA Soil Conservation Service, BLM, and the New Mexico Agricultural Experiment Station. The four surveys are:

1. Dona Ana County Soil Survey, 1980
2. Grant County Soil Survey, 1983
3. Hidalgo County Soil Survey, 1973
4. Luna County Soil Survey, 1980

The soil surveys depict map units which are made up of one or more soil series. Soils within a given soil series have similar diagnostic features and characteristics, therefore, all areas mapped as a given soil series or map unit will express similar soil characteristics (see Appendix K).

SOIL SALINITY

Soil salinity is a localized problem on isolated sites on public land within the Mimbres Resource Area. For the most part, low to moderate salinity occurs in soils found along the floodplain of the Rio Grande (predominantly private land) and closed basins and playas which occur in parts of Luna and Hidalgo Counties (also predominantly private land). Saline soils within the Mimbres Resource Area are comprised primarily of the Bluepoint series, Glendale series, Harky series, Hondale series, Mimbres series, Verhalen series, and Yturbide series. (SCS 1973, 1980, 1983)

SOIL EROSION

Soil erosion by water or wind is influenced by topography, climate, soil properties, and ground cover. There are two types of erosion caused by water, sheet erosion and gully erosion. Sheet erosion occurs on gentle slopes without defined water courses. On these areas, water spreads over vast areas, and if vegetation cover is not present, top soil is removed by the runoff. Water erosion has its greatest impact in the summer during the monsoon season. Gully erosion occurs where

runoff becomes channeled. These channels may result from vehicle tracks, livestock and wildlife trails, hiking trails, and roads that are not water barred. (SCS 1973, 1980, 1983)

Wind erosion has its greatest impact in the spring when strong westerly winds occur on a regular basis. Soils which are susceptible to wind erosion are sandy soils, fine silts, and loams. (SCS 1973, 1980, 1983)

Critical Soils

Critical soils represent areas of high erosion potential as defined by SCS range site guidelines. Range sites represent broad categories of soils with similar physical and productive characteristics. Representative range sites include: gravelly, draw, clayey, gravelly loam, limy, gravelly sand, breaks, and bottomland. These range sites have been further divided into three slope classes: 0-10 percent, 10-20 percent and over 20 percent. Increasing slope generally coincides with increased erosion potential depending on soil type. See Map 3-4.

Air

The air quality in the Mimbres Resource Area is generally very good. The air quality does not exceed the State or Federal air quality standards and is classified as a Class II area. A Class II area allows a moderate amount of degradation of air quality.

Degradation of air quality in portions of the Resource Area is the result of carbon monoxide from automobiles, blowing dust, smelters (located in El Paso, Texas; Hurley and Playas, New Mexico; and Morenci, Arizona), and increased use of unpaved roads near population centers (BLM 1983). The southern part of the Mesilla Valley, from Las Cruces to El Paso has the poorest air quality in the Resource Area. Industrial pollutants and automobile exhaust from the densely populated EL Paso-Ciudad Juarez vicinity contribute heavily to air pollution. This is especially evident during the winter when temperature inversions prevent the escape and dispersion of polluted air to higher altitudes.

Blowing dust, especially in the playas near Lordsburg and farm lands near Deming and Las Cruces contribute to air pollution in those localized areas. Extensive vehicle use of unpaved

roads especially near population centers also contributes to air pollution in portions of the Resource Area, especially near Las Cruces.

Water

SURFACE WATER

The Mimbres Resource Area contains portions of three major river basins as designated by the New Mexico State Engineer for regional water planning. They are the Rio Grande, Lower Colorado, and the Rio Yaqui.

The Rio Grande Basin is the most prominent of the three river basins and includes the Rio Grande surface drainage system, plus segments of two Central Closed Basins consisting of the Jornada Del Muerto and Tularosa Basins; and three of the Southwestern Closed Basins consisting of Mimbres, Playas, and Wamel Basins. The Rio Grande surface drainage in the Resource Area extends about 85 miles along the river to the New Mexico-Texas State line in a relatively narrow watershed. The closed basins located within the watershed account for a vast majority of the acreage in the Resource Area. These areas are closed topographically and normally do not contribute surface runoff to the Rio Grande drainage.

The Lower Colorado River Basin on the western side of the Continental Divide is the second major river basin in the Resource Area and includes segments of the Gila River and the San Simon Creek as well as the Animas Closed Basin.

The Rio Yaqui Basin, located in the far southwest corner of New Mexico, is the third major river basin within the Resource Area and includes Guadalupe Canyon. The basin contains only 40 square miles in New Mexico and streamflow occurs in response to heavy rainfall.

Surface Water Quality

Surface water quality in the Mimbres Resource Area is moderately hard and alkaline with relatively low levels of sodium, chloride, and sulphate. Salinity, as measured by total dissolved solids (TDS) is also low except in the playa lakes within several of the closed basins and is considered slightly saline (BLM 1983). Sediment flows vary over the course of a year with the heaviest loads occurring during high flows.

Average high flow sediment loads for the Rio Grande, Gila, and Mimbres Rivers are 800 tons/day, 200 tons/day, and 100 tons/day, respectively.

Water quality standards for surface water in New Mexico have been adapted by the Water Quality Control Commission to protect and sustain designated uses. General quality standards apply at all times to all support waters of the State which are suitable for recreation and support desirable aquatic life. Parameters of particular importance that are covered include: floating solids, oil and grease, plant nutrients, hazardous substances, pathogens and turbidity. Additionally, certain stream segments have more stringent standards that apply to designated uses of the surface water within a specified stream reach. In the Mimbres Resource Area, there are six stream segments, two each on the Rio Grande, Gila, and Mimbres Rivers, that have designations and standards. The water quality for these stream segments is generally within State standards; however, there are recognized problems. The Rio Grande and Gila Rivers both transport heavy sediment loads during high flows. Along the Gila River, fecal coliform bacteria is near the upper limit during low flows, and is close to not supporting secondary contact recreation. The Mimbres River has pH and temperature levels above the standards during base flows (BLM 1983).

Preparation of the "New Mexico Non-point Source Pollution Water Quality Assessment" (New Mexico Environmental Improvement Division 1988) was mandated by section 319 of the Federal Clean Water Act. The primary objective of this report was to identify all surface waters, groundwaters, and wetlands which, regardless of land ownership, are known or suspected of being impacted by nonpoint source water pollution. Within the Mimbres Resource Area are several stream segments identified by the New Mexico Environmental Improvement Division as being impaired. These stream segments and percent watershed administered by the BLM are: (1) Rio Grande mainstream from Dona Ana downstream to Mesilla, 38 percent; (2) Mimbres River from Mimbres to San Juan, <1 percent; (3) Rio Grande from Mesilla Diversion to New Mexico-Texas State line, 41 percent; (4) Gila River from mouth of Davis Creek downstream to Red Rock, 14 percent; and (5) Gila River from Red Rock to New Mexico-Arizona border, 57 percent.

Sources of potential impairments include: specialty crop production, rangelands, animal holding/management areas, dredging, flow regulation, channelization, removal of riparian vegetation, and recreation.

GROUNDWATER

The Mimbres Resource Area is within the Basin and Range physiographic region and is characterized by north-trending subparallel mountain ranges separated by basins filled with alluvial material. Most of the groundwater occurs in the alluvial deposits on lower mountain slopes and deep alluvial or bolson deposits in the valley. The bolson deposits are a heterogeneous mixture of rock from the surrounding uplands and generally the product of more than one sequence of erosion. The fill material ranges in age from Pliocene to Pleistocene. Groundwater is obtained from sand and gravel interbedded with clay and beds of silt. The groundwater is derived from precipitation, with most of the recharge occurring along permeable streambeds. Generally in the closed basins where groundwater sources have been developed, withdrawals exceed recharge (BLM 1983).

The evolution of the Rio Grande Valley is a major factor in the distribution of groundwater in the Mimbres Resource Area. The two major water bearing units in this region consist of unconsolidated to moderately consolidated alluvial deposits of the Santa Fe Group of Miocene to middle Pleistocene age, and the Rio Grande and tributary arroyo valley fill of late Quaternary age (BLM 1983).

The Santa Fe Group is the primary groundwater reservoir in this region. Aquifers in the Santa Fe produce most of the water used for domestic and industrial purposes, as well as a significant proportion of groundwater used to supplement surface irrigation supplies in the Rio Grande Valley. The other important aquifer unit consists of floodplain and channel deposits of the Rio Grande and tributary arroyos. These deposits are limited in extent and mostly restricted to the vicinity of the river. Recharge to the aquifers is mainly from infiltration from flash floods in the arroyos and some infiltration from perennial streams that occupy the upper reaches of several major arroyos (BLM 1983).

Secondary sources of groundwater in the Mimbres Resource Area are found in low porosity sedimentary rocks of early Tertiary age, consisting of conglomerates, sandstones, and shales. Yields from the few wells penetrating the sedimentary rocks are low, rarely exceeding a few gallons per minute. More comprehensive and detailed information on groundwater is contained in individual basin reports available at the Las Cruces District Office.

Groundwater Quality

Groundwater quality in the Mimbres Resource Area is highly variable depending upon the types of soluble minerals found in the water bearing formations of the selected basins. In most of the Resource Area, groundwater in the upper 1,000 feet is of good quality and contains less than 1,000 mg/1 total dissolved solids (TDS). Additional supplies of slightly saline water with TDS content between 1,000 and 3,000 mg/1 is also found in the Rio Grande Basin. Chemical analyses of wells in the area are limited in number, but those available indicate that the groundwater quality is satisfactory for livestock and wildlife use. Concentrations of fluoride above the recommended limits for livestock and wildlife were found in wells sampled in the Animas, Hachita, Mimbres, and San Simon Basins. No other parameters were above the recommended levels for livestock and wildlife. Generally, the groundwater quality in the Mimbres Resource Area is also sufficient for domestic use, with the exception of isolated cases where concentrations of sulfate, hardness, and fluoride are above State of New Mexico standards for drinking water (BLM 1983).

Groundwater Use

Water rights for the use of surface and underground water in the State are administered by the State Engineer. The Mimbres Resource Area includes all or part of 11 declared underground water basins. In all these basins, an application to appropriate underground water must be filed with, and a permit obtained from, the State Engineer (BLM 1983).

Within the Mimbres Resource Area, the primary use of water on the public land is by livestock and wildlife. Water provided for this purpose is depleted in two ways: water consumed by animals and evaporation from facilities constructed to furnish water supplies. Evaporation from dirt

tanks accounts for the largest quantity of water depleted. Approximately half the water consumed by livestock and wildlife is estimated to come from groundwater sources (BLM 1983).

FIRE MANAGEMENT

Fire Ecology

Historical evidence indicates fires were a factor in the ecological development of the southern deserts. Up until the 1920's, natural fire frequency had been approximated to be less than every 10 years to 30 years depending on the vegetation type. As livestock production increased throughout the area, natural fire frequency has diminished. Over the last 80 years, extensive grasslands have been replaced by shrub communities which do not produce fuel loads capable of carrying a fire. Natural fire in combination with drought and competition played a significant role in controlling shrubs (Wright and Bailey 1982).

Natural fire (or lack of) played a significant role in the development of the major vegetation types which occur in the Mimbres Resource Area. These vegetation types include desert grass-shrub, mountain brush (interior chaparral), and woodlands.

Desert Grass/Shrub

This type was originally a grassland type. Shrubs were controlled primarily by competition with grasses, fires, and rodents. With the decrease in vigorous perennial grass stands and an increase in shrubs, the fine fuels required to carry a natural fire are non-existent over a large part of the Resource Area. Within the desert grass-shrub type are smaller areas comprised of tobosa and sacaton draws. Before the influence of grazing these draws contained mixtures of perennial grasses usually gramas, dropseeds, annual grasses, and forbs. Today, these mixtures have been replaced with almost pure stands of tobosa or sacaton. These grasses are not preferred by cattle and are rarely grazed.

Mountain Brush (Interior Chaparral)

This type is regarded as a fire induced vegetation type (Shantz 1947). Plant species which make up this type survive fire as evidenced by numerous

seedlings and resprouting which occurs after a fire. Their large amount of loosely arranged small material and high volatile oil content make them very flammable. The dominant species which are found on this type include mountain mahogany, *Ceanothus greggii*, *Garrya wrightii*, *Quercus spp* and *Rhus spp*. Shrub cover generally recovers rapidly after a fire. About 76 percent of the preburn cover is reached within 6 years (Wright and Bailey 1982). During the years that the shrub community is recovering from the fire, dramatic increases in grasses and forbs occur in the newly created openings. Grass and forb production decreases as shrub production increases. This cycle will begin again after the next fire.

Woodland

The woodland type which occurs within the Mimbres Resource Area is comprised of pinyon/juniper and various oaks. This type is not extensive and is most common on portions of the mountain ranges which are scattered throughout the Resource Area. Historically, fire has been the dominant force controlling the distribution of pinyon-juniper, particularly juniper (Wright and Bailey 1982). Fire occurring about every 10-30 years kept the junipers restricted to shallow, rocky soils and rough topography. For the last 70 years, heavy livestock grazing has reduced grass competition as well as fuels for fires thereby permitting pinyon-juniper to invade adjacent communities (Nabi 1978). After a pinyon-juniper area has burned, a perennial grass-forb community develops followed by a grass-forb-shrub community and after 10 to 30 years pinyon-juniper is again the dominant type (Barney 1974).

Recent Fire History

Recent fire history (1977 to 1989) on public land within the Mimbres Resource Area is shown on Table 3-8.

Prescribed Fire History

Prescribed fires have not been a factor in resource management in the Mimbres Resource Area. A prescribed fire program is in the beginning stages and so far two burns have been completed. One in 1989 for wildlife habitat improvement (300 acres) and one in 1990 for a rangeland improvement (70 acres).

WILDLIFE

Wildlife habitat and wildlife species have been identified and inventoried utilizing the BLM's Integrated Habitat Inventory and Classification System (IHICS). Sixteen distinct Standard Habitat Sites (SHSs) have been mapped within the Mimbres Resource Area based on landforms and vegetation. This information is available in the Mimbres Resource Area Office.

Big Game

There are a variety of big game species found throughout the Resource Area. These species include mule deer, Coues' whitetail deer, javelina, pronghorn, ibex, desert bighorn sheep, mountain lion and elk.

Mule deer are widespread throughout the Resource Area and are most abundant in or near the various mountain ranges. The most recent New Mexico Department of Game and Fish (NMDGF) population estimates show the mule deer population at approximately 15,000 animals within the Resource Area. See Map 3-5.

Coues' whitetail deer occupy a limited range in the Resource Area. These deer are primarily found in the Peloncillo Mountains in western Hidalgo County. The most recent NMDGF population estimates show the whitetail population at approximately 2,500 animals within the Resource Area. See Map 3-5.

Mule deer are found in several SHSs, with the major use in the Grass, Mixed Shrub, Arroyo Riparian, and Riparian SHSs. Coues' whitetail deer prefer the Grass, Mixed Shrub, and Conifer Mountain SHSs which are undisturbed or are in or near the potential climax community (Anthony and Smith 1977).

The results of previous fecal analyses (BLM Files 1990) show diets for mule deer and whitetails to be high in several browse species: silktassel, mountain mahogany, oak, and sumac. A number of forbs also show up in significant amounts, including globemallow and bladderpod.

Javelina are commonly found as far east as the Florida Mountains and north past the Gila River. Their main concentrations are in southern Hidalgo

TABLE 3-8
FIRE HISTORY
1977-1989

YEAR	NATURAL	VEG. TYPE ^{a/}	MAN CAUSED (ACRES) ^{b/}	VEG. TYPE
1977	< 100	MS	< 100	DGS
	< 100	MS	< 100	DGS
	< 100	DGS	< 100	DGS
1978	< 100	DGS	< 100	DGS
	< 100	DGS		
	< 100	DGS		
	< 100	MS		
	< 100	DGS		
	< 100	DGS		
1979	< 100	DGS	< 100	MS
	> 100	MS	< 100	MS
	< 100	MS		
	> 100	DGS		
1980	< 100	MS	< 100	DGS
	< 100	DGS	< 100	DGS
1981	< 100	MS		
	< 100	MS		
	< 100	MS		
	< 100	MS		
	< 100	MS		
	< 100	DGS		
	< 100	DGS		
1982	< 100	MS	< 100	DGS
	< 100	MS		
	< 100	MS		
	< 100	DGS		
1983	< 100	DGS	< 100	DGS
	< 100	MS		
	< 100	DGS		
1984	< 100	MS		
1985	< 100	MS	< 100	MS
	< 100	DGS	< 100	W
	< 100	MS		
1986	NO FIRES ON PUBLIC LAND IN 1986			
1987	< 100	DGS	< 100	DGS
	< 100	DGS		
1988	< 100	W	< 100	MS
	> 100	MS	< 100	DGS
1989	< 100	MS	< 100	DGS
	< 100	DGS		
	> 100	DGS		
	> 100	MS		
	< 100	DGS		
	> 100	MS		
	> 100	DGS		
	> 100	MS		
	> 100	MS		
	> 100	MS		

Source: BLM Files, 1990.

Notes: ^{a/} Vegetation type; MS is Mountain Shrub, DGS is Desert Grass-Shrub, W is Woodland. Acreage is given as less than or greater than 100 acres.

^{b/} Man caused fires do not include prescribed fires.

County. The most recent NMDGF population estimates show the javelina population at approximately 1,000 animals on public land.

Javelina commonly use the Arroyo Riparian, Grass Mountain and Pinyon-juniper Grass Mountain SHSs (Donaldson 1965). Important food species for javelina include: prickly pear, agave, ocotillo, sotol, beargrass, and mast of juniper, oak, and pinyon. Forbs such as filaree, hog potato, and wild onion are also important food plants. A study in Texas showed evidence that mesquite pods are also an important food source (Everitt, et al 1981).

Several small pronghorn antelope herds are found in the Resource Area. These herds are found primarily in Luna and Grant Counties on land which contains private, State and Federal holdings. See Map 3-5. The most recent NMDGF population estimate for pronghorn antelope is approximately 500 animals. Food habit studies (Yokum 1980) have concluded that pronghorn diet consists primarily of shrubs, 71 percent, 22 percent forbs, and the remainder grass. However, in years of high forb production, pronghorn will eat more forbs than the studies indicate (Yokum 1980).

A herd of Iranian ibex, an exotic species, occupies the Florida Mountains. Beginning in 1970, seven ibex releases totaling 73 animals were made in the range. Today the population ranges between 400 and 500 animals (BLM and NMDGF Files 1990). A carrying capacity of 400 animals (post hunt) was set in 1988. The ibex in the Floridas are mainly browsers with a majority of their diet consisting of mountain mahogany, silktassel, and oak.

Prior to setting the carrying capacity, the ibex population periodically reached levels of 600 animals or more. When this occurred, the ibex would move into less rugged terrain resulting in competition with mule deer for available feed.

Desert bighorn sheep, a State-listed endangered species, occur in four mountain ranges located in Hidalgo County. These ranges are: Big Hatchets, Little Hatchets, Alamo Huecos, and the Peloncillo Mountains. The desert bighorn population is less than 100 animals and has been fluctuating between 75 and 100 animals for the past several years (BLM Files 1990). See Map 3-6.

Competition for feed with deer and cattle is a major concern in the occupied mountain ranges. Fecal samples (BLM Files 1990) collected for sheep from the Big Hatchets shows important food items for sheep consist of: mountain mahogany, cactus, winterfat, and oak. Forbs and grasses are also present in significant quantities. High use of the same shrubs and forbs is evident in deer studies while the same shrubs, forbs, and grasses make up a high proportion of cattle diets. Along with dietary competition with deer and livestock, disease and predation are other serious problems which are affecting the size and health of desert bighorn sheep herds in the Resource Area.

Mountain lions occur in all of the mountain ranges throughout the Resource Area. The mountain lion is the largest predator found in the Resource Area and feeds primarily on mule deer, javelina, and small mammals.

Elk occur in the Resource Area but are limited to the small, scattered parcels of public land which are near the National forest in Grant County. Population estimates for elk on public land are not available.

Small Game

Small game species found in the Resource Area consist of scaled quail, Gambel's quail, Mearns' quail, mourning dove, white wing dove, band-tailed pigeon, and sandhill crane.

Scaled quail are the most abundant and widespread of the quail found in the Resource Area. They can be found in any of the SHSs with the possible exceptions of Pinyon-Juniper/Grass Mountain, Oak Draw, and Conifer Mountain SHSs. These birds prefer dense shrub stands for cover and will feed near or in these stands if adequate food sources exist. Population estimates are seldom given because population levels fluctuate and are greatly affected by weather conditions.

Gambel's quail are also abundant throughout the Resource Area. The habitat requirements for Gambel's are similar to and overlap with the scaled quail but they are primarily found nearer to water and are more common in or near the Arroyo Habitat and Riparian SHSs. Gambel's quail populations fluctuate under the same conditions as scaled quail.

Mearn's quail are uncommon in the Resource Area and known populations are limited to the Peloncillo Mountains and the higher terrain north of the Gila River up to the Gila National Forest boundary. At one time, Mearn's quail were more abundant but livestock grazing has altered their preferred habitat (Ligon 1961). Mearn's quail prefer and are found primarily in the Oak Draw, Pinyon-Juniper/Grass Mountain, and Conifer Mountain SHSs.

Mourning dove are migratory birds which occur throughout the Resource Area. These birds feed largely on dried seeds, and they require water which they use regularly throughout the day. During the winter, most of the mourning dove will leave the State, but there are some birds which will remain in the area.

White winged doves occur throughout the Resource Area but are most common in the mountain ranges of Hidalgo County and the Gila River Valley. A permanent source of water is a summer range requirement. Most of these doves leave the State during the winter.

The band-tailed pigeon occurs, but is uncommon, in the Resource Area. Primary SHSs for these pigeons are: Pinyon-Juniper/Grass Mountain, Oak Draw, and Conifer Mountain. Depending on the availability of their preferred food, pinyon nuts and acorns, the pigeons may not be seen in the Resource Area in years when feed is not abundant.

Sandhill cranes may occur on public land near areas bordering farmlands and river valleys. In the Resource Area, cranes are commonly seen in and around farmlands near Lordsburg, Animas, Deming, and Hatch with cranes also using the Lower Gila Box as a fly way between feeding and roosting grounds on the Gila River.

Various species of waterfowl are found throughout the Resource Area. They are usually found during the winter months and occur primarily near agricultural areas where plentiful feed is available, water impoundments (stock ponds) and rivers.

Non-Game

There are 489 species of wildlife (excluding invertebrates) found in the Resource Area. Of this number, 451 species are considered non-game species.

Avian species account for 62 percent (278) of the total non-game species which occur in the Resource Area. This high number can be attributed to the varied topography and climate occurring within the area as well as the Resource Area's proximity to ecologically diverse areas found nearby in Mexico, Arizona, Texas, and northern New Mexico.

There are 79 species of non-game mammals, 82 species of reptiles and amphibians, and 37 species of fish which occur in the Resource Area.

Fish

There are 37 species of fish which occur in the Resource Area. The only significant fishery habitats are the Gila River and the Rio Grande along with their perennial tributaries. Sport fish species include channel catfish, flathead catfish, bluegill, crappie, and largemouth bass.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Brief Culture History

Several distinct cultural groups are known to have inhabited the region under consideration during the prehistoric period. The earliest human occupation occurred from about 9,500 BC to approximately 4,000 BC. This culture is known as the Paleoindian period and is divided into three traditions; Clovis, Folsom, and Plano. Isolated projectile points have been found within the study region which have been assigned to these Paleoindian cultures. The second major prehistoric cultural tradition in the region has been referred to as the "Archaic" or "Desert Archaic." The various Archaic cultures are believed to have occupied the study area from 7,000 BC to about AD 100. The Archaic cultures are believed to have been non-sedentary, pre-pottery hunters and gatherers. Archaic period "lithic scatter" sites are known to occur within the study region, and are primarily identified through various projectile point styles. The third major southwestern cultural group has been identified as the Mogollon. The Mogollon culture group has been divided into the western Mogollon and eastern or Jornada branch of the Mogollon. The Mogollon period starts at approximately AD 200

and extends to approximately AD 1400. Within this time period, several distinct changes occur and are characterized as the Early Pithouse Period, the Late Pithouse Period, and the Pueblo Period. Agriculture was a basic element in all of the Mogollon periods, but was probably supplemented by hunting and gathering. Archeological sites from all three of the above stated Mogollon periods are known to occur within the study region. In addition, the Apache are known to have occupied southern New Mexico from approximately AD 1650 to 1890. Archeological evidence for this occupation is rare, but Apache period sites could occur within the study area, as well as post-contact historic period sites (LeBlanc and Whalen 1980).

Archeological surveys have documented sites and isolated occurrences representative of all the cultural periods described above. Several areas within the Mimbres Resource Area are considered to contain high densities of archeological sites. These high density areas include the East and West Mesas and the terraces of the Rio Grande, tributaries of the Rio Grande, the terraces of the Mimbres River, all permanent spring localities, and all large intermittent washes.

The Paleoindian period is represented primarily by isolated projectile point discoveries throughout the Mimbres Resource Area. No single component Paleoindian site is currently known within the Mimbres Resource Area but these sites are often deeply buried. Many other Paleoindian sites have been destroyed by thousands of years of cut and fill erosion. Numerous sites of the Archaic period have been documented throughout the Mimbres Resource Area. These sites are most often characterized as small campsites, lithic procurement localities, and specialized activity areas. La Cueva in the Organ Mountains is known to contain deeply stratified Archaic midden deposits.

Many sites representative of the Mogollon period are known within the Mimbres Resource Area. The Old Town Site on the Mimbres River is a good example of a Classic Mimbres village. Most large Mimbres phase village sites within the Resource Area have been extensively damaged by pothunters. In many cases, pothunters have destroyed these types of sites with mechanized heavy equipment. Jornada Mogollon sites are fairly common and sites such as Los Tules, a pithouse village, and La Cueva contain Jornada

Mogollon components. Also, many of the prehistoric rock art sites are believed to date to the Mogollon period.

Post-contact aboriginal sites such as Apachean sites are known to occur but are often hard to identify due to their ephemeral nature and the fact that the artifacts often resemble those from earlier periods. A wide variety of historic period sites are known to occur within the Resource Area. Some of these sites are located along two significant historic trails which pass through the Resource Area, the Camino Real and the Butterfield Trail. Historic sites include mining camps, military forts such as Fort Cummings, homesteads, and unique sites such as the historic Dripping Springs Natural Area Resort.

Additional Class II and III archeological surveys will result in a more complete picture of archeological site types, subsistence, and settlement patterns within the Mimbres Resource Area.

Paleontological resource values occur throughout the area but little scientific research has been conducted. Fossilized bones of numerous Pleistocene faunas are sometimes found within the ancient terraces of the Rio Grande. Remains of mammoth, camel, horse, ground sloth, and bison, have been found in the terrace deposits, but the remains have rarely been articulated. A well preserved and articulated ground sloth was found within a lava tube in the Aden Lava Flow in the 1920's. In 1988, a BLM paleontological excavation permit was issued to excavate 280-million year old fossil trackways in the Abo Formation in the Robledo Hills area of the Mimbres Resource Area. The site is considered to be one of the most outstanding trackways localities ever discovered for vertebrate and invertebrate animals.

U-Bar-Cave in the Alamo-Hueco Mountains has yielded a large variety of Pleistocene faunal remains. Paleontological excavations in the cave are being conducted in association with bat guano mining operations at the site.

RECREATION

The Mimbres Resource Area provides many diverse opportunities for recreation, both developed and dispersed. Developed recreation is dependent on developed recreation sites, such as campgrounds or picnic areas, while dispersed

recreation occurs over large areas encompassing most of the land in the Resource Area, independent of developed facilities. Public land provides 47, 39, 12, and 34 percent of dispersed recreation opportunities, respectively in Dona Ana, Luna, Grant, and Hidalgo Counties (New Mexico Natural Resource Department 1986).

Developed recreation on public land in the Resource Area is limited to the Organ Mountains, where camping is available at the 57-unit Aguirre Spring Recreation Area. Picnicking is available at the Aguirre Spring Recreation Area, the 14-unit La Cueva Picnic Area, and the 4-unit Dripping Springs Natural Area. Developed hiking trails in the Organs include the 6-mile Baylor Pass Trail, the 4-mile Pine Tree Trail, the 1½-mile Dripping Springs Natural Area Trail, the 1-mile La Cueva Trail, and the 2-mile Crawford Trail. The Aguirre Spring Recreation Area and Dripping Springs Natural Area receive approximately 51,400 visitors per year each for a total of 102,800 visitors at developed recreation sites in the Organ Mountains. The effect on visitor use of a recently implemented day use fee has not yet been evaluated. These sites are used mainly by people from the metropolitan area, Las Cruces (population 128,000), El Paso (population 479,899), and Alamogordo (population 24,024). Visitors from all over the United States and several foreign countries (particularly Mexico, West Germany, and Canada) use the area regularly. Accuracy of visitor use data is continually improving and should show an annual total for the Organ Mountains of nearly 200,000 visits through 1990.

The Resource Area issues approximately eight Special Recreation Permits annually. Approximately half of these permits are for hunting guides while the rest go to annual events including the Baylor Pass Trail Run, the Bataan Memorial Competitive March, the Great Overland Windsail Races, the Renegade Horse Endurance Ride, and the Coyote Classic Mountain Bike Race. The demand for Special Recreation Permits has been increasing steadily over the last several years, and it is likely that additional mountain bike races and motorcycle and all-terrain vehicle races will become regular events on public land in the Resource Area. These Special Recreation Permits depend on unique recreation resources including the Baylor Pass Trail, primitive roads in the Organ Mountains, and the Lordsburg Playa.

Dispersed recreation occurs throughout the Resource Area, and public land provides the majority of outdoor recreation opportunities in Dona Ana, Luna, and Hidalgo Counties.

Dispersed recreation in the Resource Area includes hunting, hiking, camping, picnicking, rockhounding, fishing, birdwatching, and vehicle recreation. Table 3-9 summarizes recreation visits by special recreation management area (SRMA) and activity. Hunting is the most widespread dispersed recreation use in the Resource Area, with hunting seasons for game birds, small game, or big game species open year-round. Big game hunts start on April 1 when the license year starts and run through March 31 when the license year ends. These license figures probably do not accurately reflect the number of hunters on public land in the Resource Area because many hunters (particularly deer, elk, bear, and turkey hunters) are more likely to use Forest Service land than public land, while many quail hunters and ibex hunters come to the Resource Area from all over the State and other states.

Hiking is one of the major recreation uses of developed facilities in the Resource Area, with an estimated 40 percent of recreationists at Aguirre Spring Recreation Area engaging in hiking, and approximately 90 percent of recreationists at the Dripping Springs Natural Area. These estimates combined with the visitor estimate suggest that nearly 21,000 hikers use the Baylor Pass or Pine Tree Trails and over 46,000 hikers will use the Dripping Springs Natural Area annually.

The New Mexico Statewide Comprehensive Outdoor Recreation Plan (SCORP) (NM Natural Resources Department 1986) analyzed outdoor recreation activities statewide and found that approximately 34 percent of New Mexicans engage in nature viewing, 25 percent in sightseeing, 24 percent in picnicking, 20 percent in pleasure driving (cruising), 17 percent in hiking, and 15 percent in shore fishing. Other recreation uses involving public land include backpacking (4 percent of New Mexicans), bicycling (6 percent), primitive camping (7 percent), developed camping (7 percent), horseback riding (2 percent), hunting (4 percent, NMDGF data indicate approximately 10 percent of New Mexicans hunt), and whitewater boating (1 percent). The SCORP further identified outdoor recreation needs by county for the State.

TABLE 3-9
ESTIMATED RECREATION VISITS BY
SPECIAL RECREATION MANAGEMENT AREA (SRMA) AND ACTIVITY

ACTIVITY	ORGAN MOUNTAINS	LOWER GILA BOX	MIMBRES EXTENSIVE
ORV	1,000	100	10,000
CAMPING	10,000	500	3,000
PICNICKING	80,000	500	3,000
HUNTING	10,000	100	100,000
HIKING	40,000	500	10,000
SIGHT SEEING	20,000	0	20,000
ROCK CLIMBING	1,000	0	500
BICYCLE	<u>5,000</u>	<u>0</u>	<u>5,000</u>
TOTAL	187,000	1,700	151,500

Source: BLM, 1991.

The USDI Heritage Conservation and Recreation Service compiled a Natural Rivers Inventory, Natural and Free-flowing Phase in April of 1980. The report described the Gila River in Arizona and New Mexico as being natural and free-flowing, and qualifying for further study for wild, scenic or recreational river potential. In May of 1982, the USDI National Park Service completed an inventory of outstandingly remarkable values of the free-flowing rivers and determined that the Gila River in the Mimbres Resource Area contains five of the seven values which can qualify a river for further study. The Gila River between the Burro Mountains and Virden will be studied for wild, scenic or recreational status as part of the RMP. The RMP team will serve as the study team for the river in accordance with BLM policy (see Gila River Study Report, Appendix J).

The National Scenic Trails Act of 1968 required the Secretary of Agriculture to complete a Comprehensive Plan for the Continental Divide National Scenic Trail and for the Departments of Agriculture and Interior to prepare environmental assessments of the trail. The Comprehensive Plan was completed in 1985 and directed the BLM to analyze potential routes for the Continental Divide National Scenic Trail in RMPs.

VISUAL RESOURCES

The visual resources of the Resource Area have been inventoried and classified into Visual Resource Management (VRM) classes through the Las Cruces/Lordsburg MFP Amendment/EIS. VRM classes are management zones wherein management actions and controls on proposed actions vary in relation to scenic values. (See Appendix G.) Management objectives for VRM Classes are:

Class I. Preserve the existing character of the landscape. Natural ecological changes and very limited management activities are allowed. Any change to the characteristic landscape must not attract attention.

Class II. Retain the existing character of the landscape. The level of change to the character of the landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III. Partially retain the existing character of the landscape. The level of change to the characteristic landscape can be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV. Provide for management activities which require major modification of the existing landscape. The level of change to the characteristic landscape can be high. These management activities can dominate the landscape and be the major focus of viewer attention; however, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

An 8,947-acre portion of the Organ Mountains is designated as a Scenic Area of Critical Environmental Concern (ACEC) and is managed as a VRM Class I area. VRM Class II areas include the wilderness study areas (WSAs), the Organ and Franklin Mountains, and most mountain ranges and hills in the Resource Area, especially along highways. Class III areas are mainly the flatlands, uplands, and basin areas along highways. Class IV areas comprise the non-hilly areas that are not visible from highways. See Map 3-7.

WILDERNESS

The Mimbres Resource Area contains 14 designated WSAs, totalling 382,909 acres. The BLM completed the New Mexico Statewide Wilderness Study Environmental Impact Statement and Wilderness Analysis Reports in January of 1988. Portions of seven of these WSAs (totalling 239,018 acres) are recommended as suitable for wilderness designation by the New Mexico State Director. These areas are the Aden Lava Flow WSA, the Big Hatchet Mountains WSA, the Cowboy Spring WSA, the Gila Lower Box WSA, the Organ Mountains WSA, and the West Potrillo Mountains and Mount Riley WSAs. The Alamo Hueco Mountains WSA, Blue Creek WSA, Cedar Mountains WSA, Cooke's Range WSA, Florida Mountains WSA, Robledo Mountains WSA, and Las Uvas Mountains WSA are recommended as unsuitable for wilderness designation.

Three other areas within the planning area boundary have been studied for wilderness suitability. All three areas are managed either jointly or completely by the San Simon Resource Area of the Safford District in Arizona. The Peloncillo Mountains WSA contains 12,317 acres of which 4,061 acres are within New Mexico. It has been recommended as suitable for wilderness designation. The 4,146-acre Guadalupe Canyon Instant Study Area was studied for wilderness suitability in the Coronado National Forest Plan, and was recommended as unsuitable for wilderness designation. The 932-acre Apache Box WSA was studied for wilderness suitability in the Arizona Mohave Wilderness EIS and was recommended as unsuitable for wilderness designation.

All areas studied for wilderness suitability are currently being managed under the Interim Management Policy and Guidelines for Lands Under Wilderness Review, and will continue to be managed as WSAs until Congress either designates the areas as wilderness or releases them from the wilderness review process through legislation.

Public land has been consolidated in four areas through acquisition of State trust or private lands, necessitating wilderness inventories on these areas. The four areas are the southern Peña Blanca Inventory Unit in the Organ Mountains from Barr Canyon to Peña Blanca; the Organ Needles Inventory Unit in the Organ Mountains from the southern boundary of the Organ Mountains WSA south to Squaw Peak; the Gray Peak Inventory Unit in the Peloncillo Mountains from Gray Peak south to Post Office Canyon; and the Apache Box Inventory Unit from Apache Box south to Crookson Peak. These four areas all meet the wilderness criteria for size, solitude, opportunities for primitive and unconfined types of recreation, and supplemental values (see Appendix I, for Wilderness Inventory Reports). The Peña Blanca, Organ Needles, and Gray Peak Inventory Units all appear to be very natural. The Apache Box Inventory Unit has substantial human impacts to naturalness.

SPECIAL STATUS SPECIES

Under the authority of the Endangered Species Act of 1973, the BLM is mandated to conserve, protect and recover special status species (T&E)

and their habitats. Species proposed for listing as special status species and their critical habitat shall be managed with the same level of protection as listed species. With candidate species, the BLM shall carry out management, consistent with the principles of multiple use for the conservation of candidate species and their habitats. The BLM shall carry out management for the conservation of State-listed species. State laws protecting these species apply to all BLM programs and actions to the extent that they are consistent with the Federal Land Policy and Management Act (FLPMA) and other Federal laws.

Plants

Plant species occurring in the Resource Area which are Federally-listed (threatened, endangered, or candidate), and those selected by the New Mexico State Heritage Program as a special concern element (sensitive) are listed in Appendix L-1.

Animals

There are 56 special status animal species which occur within the Mimbres Resource Area. Of the 56 species, 5 are listed as Federally endangered (FE), 3 are Federally threatened (FT), 19 are category 2 candidate species (FC2), 6 are State endangered 1 (SE1), and 23 are State endangered 2 (SE2). See Appendix L-2 for the names and status of the special status species.

RIPARIAN AND ARROYO HABITATS

Riparian

Riparian areas are lands directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and stream banks are typical riparian areas. Also considered as riparian areas are springs, seeps, and drainages which have a shallow water table with vegetation which is indicative of riparian areas.

Riparian areas are unique and among the most productive and important ecosystems. Characteristically, riparian areas display a greater diversity of plants and wildlife than adjoining ecosystems. Healthy riparian systems filter and

purify water as it moves through the riparian zone, reduce sediment loads, and enhance soil stability, and contribute to groundwater recharge and base flows.

Within the Mimbres Resource Area are 16 designated riparian areas. These areas are:

Dona Ana County--Sotol Creek, Indian Hollow Creek, Filmore Canyon, Ice Canyon, Adams Riparian area.

Grant County--Apache Box, Bear Creek, Gila Middle Box, Ash Creek, Blue Creek.

Hidalgo--Guadalupe Canyon, Gila Lower Box, San Simon Cienega, Emory Canyon, Thompson Canyon.

Luna County--Spring Canyon.

These riparian areas contain diverse riparian vegetation types. Types of vegetation found include:

Trees--Arizona sycamore, Fremont cottonwood, netleaf hackberry, Arizona walnut, box-elder, velvet ash, Gooding willow, western soapberry, desert willow, various oaks and junipers.

Shrubs--Apache plume, screwbean mesquite, seepwillow, rabbitbrush, chokecherry, honey mesquite, sumac.

Arroyo

Arroyo habitats are an important component of wildlife habitat and watershed within the Resource Area. These areas are directly influenced by runoff from seasonal storms (usually summer, winter) and provide cover and feeding areas for wildlife in relation to adjoining lands. Arroyo habitats are usually found in grassland/shrubland vegetation types, extending out from canyons which drain desert mountain ranges.

Common vegetation found in these habitats include:

Trees--desert willow, netleaf hackberry, western soapberry, juniper.

Shrubs--Apache plume, rabbitbrush, sumac, honey mesquite, fourwing saltbush, algerita.

SOCIAL AND ECONOMIC CONDITIONS

The following profile on social and economic conditions was prepared for the four counties within the Mimbres Resource Area. A separate supplement for the City of El Paso and El Paso County has also been prepared but, due to space limitations, was not included in this document. Copies of that document are available at the Mimbres Resource Area Office. To briefly summarize, there is a close social and economic relationship between the City of El Paso, El Paso County and public land in the Mimbres Resource Area, particularly in southern Dona Ana County. Since most land in Texas is privately-owned, many Texans rely on the public land in New Mexico for recreational opportunities. Economic and population growth in the "Rio Grande Corridor," between Las Cruces and El Paso, is also closely related.

Population

The population of the Mimbres Resource Area increased from 144,178 in 1980 to 179,200 in 1988 (see Table 3-10). Ninety percent of this increase (31,660) occurred in Dona Ana County. While the population of Luna County increased by 2,515 and the population of Grant County increased by 996, the population of Hidalgo county decreased by 149. The population increase in Dona Ana County was concentrated in the Rio Grande Valley from Leasburg to the Texas State Line. This area, known as the "Rio Grande Corridor," has also been the scene of rapid economic development. The population changes in the Mimbres Resource Area are the result of migration to areas of economic growth and emigration from areas of economic decline, and are closely related to the changes in reported wages adjusted for inflation. The Bureau of Business and Economic Research has predicted similar trends in population growth until the year 2010. According to these predictions, the population of Dona Ana County will increase by 117.2 percent to 211,100, the population of Grant County will increase by 35 percent to 33,800, the population of Hidalgo County will increase by 42.9 percent to 8,655, and the population of Luna County will increase by 54.5 percent to 24,100.

These predictions are consistent with National population trends toward slow growth or decline in rural areas and concentration of population in mid-sized cities and suburban areas.

Housing Trends

According to the 1980 Bureau of the Census report, there were 52,191 housing units in the Mimbres Resource Area. Dona Ana County had 33,944 permanent housing units and 5,456 mobile homes, Grant County had 9,631 housing units and 1,754 mobile homes, Hidalgo County had 2,326 housing units and 359 mobile homes, and Luna County had 6,290 housing units and 1,286 mobile homes. From 1980 until 1985, the State of New Mexico maintained building inspection offices in Las Cruces, to serve Dona Ana County, in Deming to serve Grant and Luna Counties, and in Lordsburg, to serve Hidalgo County. In 1985 these offices were consolidated into the Las Cruces Building Inspection Office which serves the entire Resource Area. As a result, it is not possible to quantify the number of housing units built in each county. However, since 90 percent of the population growth in the Mimbres Resource Area occurred in Dona Ana County from 1980 to 1988, and 94 percent of new jobs created in the Resource Area during this time were in Dona Ana County; it would be reasonable to assume that over 90 percent of the new housing built in the Mimbres Resource Area from 1980 to 1987 was built in Dona Ana County. The housing industry is very sensitive to fluctuations in the business cycle and particularly to interest rate fluctuations. The number of building permits issued in the Mimbres Resource Area reached its peak in 1984, with 1,761 housing units authorized. Since that time, the number of permits issued for the Resource Area has fluctuated between 700 and 1,000.

Employment Trends

In 1979, there were 41,381 jobs in the Mimbres Resource Area, and in 1987 there were 51,915 for a net increase of 10,534.

Dona Ana gained 9,962 new jobs or 95 percent of the jobs created in the Mimbres Resource Area. Grant County lost 31 jobs, while Luna County gained 332 new jobs and Hidalgo County gained

TABLE 3-10
POPULATION CHANGE 1980 TO 1988

YEAR	DONA ANA	LUNA	GRANT	HIDALGO	MIMBRES RESOURCE AREA
1980	96,340	15,585	26,204	6,049	144,178
1988	128,000	18,100	27,200	5,900	179,200
CHANGE	31,660	2,515	996	(149)	35,022
% CHANGE	32.86%	6.14%	3.805	2.465	4.295

Source: Bureau of Business and Economic Research, The University of New Mexico, Albuquerque 1988.

274 new jobs. This amounts to an increase of almost 25 percent for the Mimbres Resource Area. Dona Ana County had the greatest percentage increase in jobs of almost 34 percent. Employment in Hidalgo County increased by 20 percent, and in Luna County by almost 8 percent. Grant County lost less than 1 percent of 1979 employment. The private sector gained 7,817 new jobs in the Mimbres Resource Area; while government employment increased by 2,717. The retail trade sector accounted for an increase of 3,068 new jobs for a gain of 43 percent, the service sector gained 2,007 new jobs for a gain of 54 percent, 1,208 new jobs were created in agriculture for a gain of 49 percent, and manufacturing gained 1,113 new jobs for a gain of 29 percent. Employment in the mining industry declined by 1,021 or 39 percent, and the construction industry lost 250 jobs, or an 8 percent decrease. From 1979 until 1987, government employment increased by 2,717, for an increase of 20 percent. Employment by local governments added 2,573 new jobs for a 29 percent increase, employment by State government increased by 812 or 22 percent, and Federal employment increased by 332 or 7 percent.

Trends in Per Capita Income

When corrected for inflation, per capita income in the Mimbres Resource Area has increased by less than 1 percent from 1979 to 1987. Dona Ana County is the only county to experience an increase in per capita income after inflation.

From 1979 to 1985, the average per capita incomes of Luna, Grant, and Hidalgo Counties declined in relation to the State average while per capita income in Dona Ana increased in relation to the State average. Per capita income is less than the State average in all the counties in the Mimbres Resource Area. Dona Ana County has the highest per capita income (\$8,532), followed by Grant County (\$7,860), Hidalgo County (\$7,539), and Luna County (\$6,944). The average per capita income for the State of New Mexico was \$8,881 in 1985. The reduction of per capita income for Grant, Hidalgo, and Luna Counties is the result of unemployment in the metal mining, smelting, and construction industries. Most of the new jobs created in these counties have been from the lower paying service, retail trade, and government sectors. Another measure of aggregate purchasing power is reported wages from the Covered Employment and Wages Quarterly Report by the New Mexico Employment Security Department. This report summarizes the total reportable wages in each employment sector for the counties of the State. The result of this shift in employment is even more striking when 1987 wages (corrected for inflation) are compared to 1979 wages. Wages in the mining sector decreased by 42 percent from 1979 to 1987, wages in the construction sector decreased by 7 percent, and wages in the Federal Government Sector decreased by 8 percent. During the same period, wages in the service sector increased by 63 percent, in local government by 38 percent and in finance insurance and real estate by 35 percent.

These changes have resulted from macro-economic trends which have affected many regions of the nation in similar ways.

Summary

From 1979 until 1987, a social and economic transformation has been occurring in the Mimbres Resource Area. There has been remarkable economic and population growth in Dona Ana County, and slow or negative economic and population growth in the remaining counties. This has resulted in a concentration of population and income in Dona Ana County, principally in the area from Las Cruces to El Paso, Texas known as "The Rio Grande Corridor." It is likely that this trend will continue, and that the Counties of Grant, Luna, and Hidalgo will continue to grow more slowly in relation to Dona Ana County.

ATTITUDES

The following section analyzes RMP scoping comments from 1981 (for the Las Cruces/Lordsburg RMP, which was never completed) in relation to RMP scoping comments from 1989 for the current Mimbres RMP.

Introduction

Public opinion and attitude research has shown that most of the general public is not informed about many areas of government policy and is, therefore, not concerned. Another large group consists of people who have knowledge of policy issues, but do not generally have strong opinions because they do not feel as if they are directly affected, or they do not feel that they are well informed. The vast majority of the public who do not volunteer their opinions belong to these two groups. Persons who are concerned enough to be informed and volunteer their opinions are generally motivated by their value system or economic concerns and termed an "issue public." These persons are more likely to participate in civic and governmental affairs and are likely to volunteer their opinions in an effort to influence policy decisions. They are a small but important segment of the population who tend to be "opinion leaders" (Oskamp 1977).

There are two broad categories of issue public which have provided comments for the RMP/EIS process. One group is primarily motivated by economic values; they have an economic interest in the development of natural resources, and a strong belief in the ability of the free market system to provide economically based solutions to resource issues.

The second "issue public" that provided comments for the RMP/EIS process are motivated by environmental concerns. Research has shown that the numbers of persons expressing these concerns have increased dramatically since the 1960's. This increase is related to media coverage of environmental disasters such as oil spills, as well as to direct observations of pollution and environmental problems (Oskamp 1977). These persons are motivated by concerns of environmental deterioration and perceive private economic interests as contributors to the problem.

Analyses of the Comments

The issues identified during the scoping process can be categorized by the controversy they generate. Controversial issues provoke strong opinions from different publics which are in opposition. Noncontroversial issues produce agreement between publics, or only mild disagreement. Controversial issues tend to attract more comments than noncontroversial issues. More responses are directed towards issues where the public feels that BLM policy is in conflict with their beliefs.

PUBLIC ACCESS

In 1981, there were 69 comments concerning public access to BLM-administered land. Three opinions were expressed concerning this issue. Twenty-four persons, mostly ranchers, expressed the view that no efforts should be made to secure additional access to public land. A representative comment from this group was; "The BLM should not acquire additional land for rights-of-way for access." and, "The BLM should uphold private property rights." Other concerns expressed by this group were damage from vandalism, road maintenance, and trespass on private land. A second group consisting of 11 persons favored

limiting public access in some way either by charging fees or through selecting lands for public access. This group consisted of a combination of ranchers and environmentalists. Their concerns were for protection of habitats and private property. A third group, consisting of 34 persons, expressed the opinion that BLM should attempt to acquire public access to all public land. This group, consisted of sportsmen, environmentalists, and mining interests. Four persons expressed the belief that public access through private land should be made a condition of grazing permits.

Twenty-five comments concerned public access in 1989. Seventeen supported acquisition of public access through land exchange or acquisition. There were four comments for requiring leaseholders to provide access through their private land as a condition for their permits, and four comments opposing any land exchange or acquisition for the purpose of securing public access. Two comments were for the disposal of inaccessible land. Other comments included limiting access to archeological sites; and the need to publish a map indicating the accessibility of public land.

In 1981, 16 percent of the total comments offered concerned the issue of public access. Of these comments, 49 percent supported land exchanges or acquisitions to acquire access, 38 percent were against acquisitions or exchanges for acquiring access, and 13 percent advocated a policy of limited access. In 1989, 7 percent of the total number of comments concerned public access. Of these, 74 percent were in favor of land exchanges or acquisitions for acquiring public access, while 26 percent expressed opposition to access acquisition. Public access across private land was an issue embraced by the Sagebrush Rebellion. The general level of concern over access in 1981 was a product of this movement. In 1989, these concerns had declined, and there was less general interest in the issue of access. The consensus of opinion seems to be for the acquisition of access through private land through land acquisition and exchange, but not through condemnation.

GRAZING

There were more comments concerning grazing in 1981 than any other issue. Perhaps this was

because the issue was defined as vegetation allocation between livestock, wildlife, and watershed. This type of definition encourages the view that these interests are competitive and mutually exclusive. There were a large number (47) of comments from the ranching community. The major concerns expressed in these comments were that any reductions in stocking rates should follow the guidelines of the Public Range Improvement Act of 1978; livestock should have priority over wildlife in forage allocation; and, that historical preference should be the base for any stocking changes. Other comments supported present management, and advocated a larger role for ranchers land management planning. Thirty-five comments on grazing were made by the general public and sports and environmental groups. There were 21 comments for reductions in grazing, 10 comments supporting present management, and 3 comments advocated competitive bidding or higher fees for grazing permits. There was a clear difference in concern over grazing between the ranching community and other interests on the grazing issue in 1981.

There were nine comments directed toward grazing policy in 1989, 12 additional comments concerning grazing addressed to the soil, air, and water and the vegetation issues. Twenty of these comments advocated some form of restriction or reduction in grazing, and one comment expressed the opinion that grazing should be considered as an issue in the Mimbres Resource Area EIS. This indicates a level of concern over grazing in the general public. This a result of the public perception that rangelands are generally overgrazed and mismanaged (Holecheck 1990).

WILDERNESS

The wilderness issue was one of the most controversial issues in 1981. Ranching and other resource interests regarded the wilderness designation as a prohibition of all economic uses of the land. In the 1981 RMP process, there were 60 comments made concerning the 15 wilderness study areas (WSAs) in the Las Cruces/Lordsburg RMP. Fifty-eight percent of the comments were opposed to WSAs or advocated multiple use in WSAs. Forty-two percent of the comments supported the designated WSAs or were in favor

of expanded WSAs. There was a sharp division of opinion between the resource and environmental interests over this issue.

In 1989, the ACEC issue drew more comments than any other issue. Fifty-three percent of the comments were in support of one or more of the proposed ACECs. Twenty-eight percent of the comments were suggestions for additional areas to be included as ACECs. Nineteen percent of the comments were in opposition to one or more of the ACECs.

Wilderness and ACECs are still a controversial issue for many in the Mimbres Resource Area, although not as much so as in 1981. Perhaps this is due to the changing perception of the ranching community that traditional uses of the land will not be affected by Wilderness designation (Kutz 1989).

WILDLIFE MANAGEMENT

There were 69 comments concerning wildlife management in 1981; 42 of the comments were made by ranching interests, 17 by the general public, and 10 by sports and environmental groups. The comments from the ranching community favored animal damage control for predators and rodents (11 comments); control of big game populations to reduce competition with livestock (9 comments); placing responsibility for wildlife management with New Mexico Department of Game and Fish (9 comments); limiting the amount spent for each "target animal" (4 comments); compensating ranchers for water used by wildlife or damage caused by hunters (4 comments); and, eliminating exotic species (2 comments). Two comments were for emphasizing wildlife management of game animals, and one comment was against animal damage control of predators. The general public favored an emphasis on wildlife habitat management as opposed to species management (13 comments); and expressed opposition to animal damage control (2 comments). There was one comment favoring expansion of wildlife management areas and one comment favoring control of exotic species. BLM wildlife policy apparently scored high ratings with environmental and sports groups as all 10 comments expressed satisfaction with current management. The comments from the

ranching community expressed concern with vegetation allocation and were closely related to the livestock/wildlife competition issue. There was some sentiment that if the range was being overgrazed, then the numbers of big game should be reduced. Some comments reflecting this view are (RMP Comment 5-81): "Allocation of wildlife forage should not be made at the expense of livestock numbers." and, "Provisions should be made for reduction of wildlife numbers in the case of overabundance, just as with livestock numbers." The general public viewed this issue as a matter of habitat preservation rather than as one of forage allocation between wildlife and livestock.

In 1989, 35 comments were made concerning wildlife management. There were 10 comments supporting habitat preservation; 11 comments favoring the reestablishment of special status species (including bighorn sheep and the Mexican wolf); 5 comments for the reduction or control of exotic species; 4 comments against animal damage control; 2 comments advocating limited grazing in riparian areas; 2 comments supporting animal damage control, and 1 comment recommending a higher priority for wildlife in general. The general view expressed was for enough habitat preservation for the survival of the original complement of species in at least a part of the Resource Area. The area of strongest conflict is over the reintroduction of the Mexican wolf. There were five comments supporting wolf reintroduction; an action which is strongly opposed by stockmen (although there was only one comment opposing wolf reintroduction). There was only one comment which could be identified as coming from a rancher in the 1989 wildlife comments.

MINERALS

In 1981, the energy minerals issue drew more comments than any other issue except grazing. On this issue, there was little difference between the opinions of the general public and the ranching community. The ranching interests felt that development of energy minerals was necessary for the National interest, but that reclamation of any surface damage should be required. A comment expressing this view is (RMP Comment May 1981): "Energy exploration is important due to the national energy situation; but a strong policy of limiting damage to the surface and to provide

compensation to the livestock operator for the loss of forage and disruption of normal operations should be adopted. Guidelines for restoration and reseeding should be prepared." The general public favored restricting energy mineral development from certain areas such as ACECs and WSAs. They also favored strong requirements for reclamation. A representative comment is (RMP Comment May 1981): "WSAs should be low priority sites for energy and mineral development. Priority should be given to revegetating impacted areas. Mineral extraction should be restricted to methods and areas for which rehabilitation methods are proven adequate and economical to restore biologic productivity."

Sand and gravel, not energy minerals, was the major minerals concern in 1989. There were 29 comments on minerals in the 1989 scoping process. Fourteen comments concerned the need for reclamation of mining areas; five comments recommended restricting mining activity in WSAs ACECs and scenic areas; four comments were for keeping all areas open for mineral development; four advocated competitive bidding for mineral leases; and two comments were for reforming the 1872 mining laws. Two comments expressed concern over pollution from rock crushers. There is some consensus on this issue regarding the need for measures for prevention of surface damage and for requiring reclamation following mineral development.

VEHICLE MANAGEMENT

There were 69 comments on off-road vehicle use in 1981; 64 supported limiting off-road vehicle use to specified areas, existing roads, or to designated roads; two advocated total closure to off-road vehicle use, and three were opposed to restrictions on off-road vehicle use. Sports and environmental groups joined the ranching community in their opposition to unrestricted off-road vehicle use. Some hunters and mineral interests favored a policy of open off-road vehicle use. Some typical comments concerning off-road vehicle use were: "Off-road vehicles are destructive; directly to vegetation, and indirectly by making easy access to areas which cannot be patrolled or managed" (RMP Comment June 1981) and "I like the idea of controlling off-road vehicles, but feel some areas need to be set aside for those who enjoy this

activity. I also wonder what effect this type of control would have on the rancher and the effort to exploit energy potential in the area" (RMP Comment May 1981).

Opinions on the off-road vehicle issue have changed very little since 1981. In 1989, 38 comments were made concerning off-road vehicle use; 13 supported designated areas (single-use zones) for off-road vehicle use, 7 proposed the use of designated roads only; 6 favored restricting use to existing roads; 7 recommended closures for sensitive areas; 7 favored closing all unneeded roads; and 2 were for total closure to off-road vehicle use. Two supported an open off-road vehicle policy, while one expressed the need to preserve roadless areas.

LAND TENURE

This issue was not addressed in the 1981 RMP process. In 1989, there were 44 comments addressing the issue of land tenure. Thirty-one comments were in support of the consolidation of public land, with acquisition of private land in ACECs, WSAs, and lands needed for access, and disposal of isolated tracts. Seven expressed the need to retain or acquire lands near El Paso and Las Cruces for open space, wildlife, or recreation. Four comments expressed opposition to any land acquisition and one comment opposed disposal of public land for the purpose of establishing a landfill at Mesquite.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Although cultural and paleontological resources were not considered as an issue in 1981, there were 19 comments expressing the view that cultural resources should be considered in the RMP.

In 1989, there were 14 comments concerning this issue. All of these comments were concerned with protection of this resource. The greatest concern was for Mimbres sites followed by the fossil trackway site and protection of rock art sites. There was one comment expressing the need for interpretive sites; one on the need for an archeological survey of the Resource Area, and

one comment advocating private management of archeological resources.

RECREATION

Recreation was not considered as an issue in the 1981 RMP scoping process. There were several comments relating to recreation in the vehicle management and access issues. These comments were primarily concerned with vandalism or the lack of public access to recreational areas.

There were 25 comments related to recreation in the 1989 scoping process. Twelve comments addressed the need for more recreation sites near urban areas; five of these were for more hiking and multi-purpose trails, and seven of these comments were recommendations for development of specific areas. Nine comments expressed a preference for "primitive" recreation sites with a minimum of development. Two comments were concerned with the conflict between recreationists and ranching or with vandalism. One comment expressed concern with the level of funding for recreation and enforcement.

Most of the public seems to desire more multi-purpose trails that are readily accessible from urban areas. There seems to be a bias against highly developed "showcase" recreation areas in favor of less developed primitive sites. There is still some concern over vandalism expressed by the ranching community.

RIGHT-OF-WAY CORRIDORS

Right-of-way corridors were not considered an issue in 1981; in 1989, there were 12 comments on this issue. Seven comments expressed preference for using existing right-of-way corridors. Two comments recommended locating rights-of-way for minimal disturbance; two were for reseeding of disturbed areas, and one supported creation of rights-of-way "as needed".

SOIL, AIR, AND WATER

This issue was not considered in 1981. There were 30 comments on this issue in 1989. Seven comments advocated the reduction of grazing to prevent erosion; eight comments expressed concern over pollution from landfills or mining

activities; six comments were concerned with the acquisition of in-stream flow (requiring a change in State law); four comments recommended erosion control structures, and there were three comments expressing the need to protect riparian areas. There was general consensus that soil, air, and water need to be protected. The ranching community was concerned with the effects of off-road vehicle use and mining while the general public and environmentalists were more concerned with the effects of grazing and irrigation. Studies have shown that the level of concern over environmental problems is inversely dependent on the economic interest the person had in its source (Oskamp 1977). This phenomenon may explain the difference in perception concerning the cause of soil erosion and the solutions preferred by different "issue publics".

VEGETATION

There were 32 comments on the vegetation issue in 1989; this issue was not considered in 1981. Eight comments expressed concern over the protection of native or special status species vegetation; seven comments advocated reductions in grazing to protect vegetation; seven comments were in opposition to the use of herbicides to control unwanted vegetation; eight comments favored the sale of fuelwood and plants for landscaping; two comments advocated the use of herbicides for the control of undesirable vegetation. There is a clear division here between the ranching public and the environmental public. The environmental public is concerned over species diversity and wildlife habitat that vegetation provides; while the ranching community is concerned with the resource base needed for the economic production of livestock.

Conclusion

The most controversial issues are those which are concerned with the conflict over land use for economic purposes versus ecological benefit. These issues include grazing, wilderness, ACEC, access to public land, and land ownership adjustments. Noncontroversial issues involve land uses that are seen to be destructive by both issue publics, such as unrestricted off-road vehicle use or clearly defined areas of resource protection such as cultural resources and mining reclamation. Vehicle

management, minerals, cultural and paleontological resources, right-of-way corridors, and recreation are relatively noncontroversial issues at this time. There are two "issue publics" with fundamentally conflicting philosophies over resource issues. On one hand is the ranching community, on the other, the environmentally motivated public. Their positions are strongly held because they are based on fundamental values. The economically motivated ranching community views public land as a source of livelihood for their communities. They view the value of the land in terms of its capacity for production, and are opposed to perceived restrictions to the economic use of the land. The environmentally concerned public perceive the land as habitat for man and the native complement of species. They place high value on biodiversity, aesthetics, and the land as a source of pure air and water; and as refuge from urban life where it is possible to find solitude. These may not be mutually exclusive conditions; it is the goal of the planning process to balance economic use of the land with a healthy and productive ecosystem.

SOCIAL CONDITIONS

The population of the Mimbres Resource Area has a long and varied history. The earliest inhabitants were Amerindians who first occupied the area as early as 12,000 B.C. The first inhabitants of the area were hunters who subsisted on now-extinct animals such as giant bison and mammoth. These hunters disappeared by 6,000 B.C. and were replaced by a hunting and gathering society. By 3,000 B.C. the first agriculture was introduced into this area from Mexico. The importance of agriculture increased until AD 1,200 when there were extensive pueblo villages along the Rio Grande, Mimbres, and Gila valleys. Two distinct cultural groups, the Jornada Mogollon and the Mimbres survived by farming and hunting. The fate of these people is unknown, but the remains of their villages are still found in the valleys, and their pottery has become world famous. Sometime after the departure of these farming peoples, the area was occupied by nomadic hunting groups. The most famous of these, the Apache, were inhabiting this area when Don Juan de Onate led the first Europeans through this area in 1598. The initial settlement

of this area proceeded slowly. Refugees from the Pueblo Revolt of 1680 settled at Ysleta, Texas. Some of their descendants now occupy the village of Tortugas in Dona Ana County. The Camino Real, a trade route from Chihuahua to Santa Fe, was established in the 1700's and passed through Dona Ana County. The villages of Mesilla, Las Cruces, Dona Ana, and Robledo were stations on the Camino Real. Control of New Mexico passed from Spain to Mexico with the Treaty of Cordova on August 24, 1821. The area was a remote northern province of Mexico until the Mexican War of 1848 and the Gadsden Purchase of 1853. The first Anglo settlers arrived in the 1860's (Jenkins 1973). As a result of the history, the Mimbres Resource Area has a blend of Anglo and Hispanic culture which gives it a distinctive quality.

The present population of the area is almost evenly divided between Hispanic and Anglo (U.S. Bureau of the Census 1980). The greatest concentration of Hispanics is in the Mesilla Valley, where many of the small towns have a distinctive "New Mexican" atmosphere. The present population is influx because of an extensive amount of immigration into Dona Ana County. In 1980, only about 50 percent of the residents of the Mimbres Resource Area had been born in the State of New Mexico. After rapid growth in the 1970's, the rate of growth has slowed. This is due to several demographic factors; the baby bust, less migration as the population gets older, a general lowering of fertility rate, and the fact that international migrants tend not to stay in New Mexico. The population will continue to age until 2010 and beyond. In 1980, 27 percent of the population of the Mimbres Resource Area were 14 or younger, 65 percent were from 15 to 64 years of age, and 9 percent were 65 years of age or older. In 1990, 25 percent of the population is 14 or younger, 64 percent of the population was 15 to 64 years of age, and 11 percent were older than 65. The 65+ age group will become an increasing proportion of the population, particularly in Luna and Hidalgo Counties; Dona Ana County and Grant County will also follow this trend, but will have a lower proportion of the 65+ age group (UNM 1988). The educational level of the population will increase particularly in Dona Ana County where approximately 20 percent of the residents are

enrolled in post-secondary education. Another trend which is apparent is the return of professionals to graduate school or other training programs to keep pace with the rapid technological pace of the late twentieth century. The Mimbres Resource Area's future population will be older, more educated and will be more likely to be employed in the service sector or in government than the present population. The cultural mixture of the population will remain approximately 50 percent Hispanic and 50 percent Anglo with a small number of Native Americans and other ethnic groups. The population will be more urban and less rural, although agriculture will remain an important part of the social environment. The concerns and attitudes of the population will be affected by these long-term demographic trends.

ECONOMIC RELATIONSHIPS

Mineral Production and Housing

From 1985 until 1989, 1,916,640 cubic yards of sand and gravel, 80,756 tons of building stone, 53,066 cubic yards of cinders, and 853,538 cubic yards of other materials were produced from BLM sources in the Mimbres Resource Area. These products had an on-site value of \$762,201. These products were essential to the construction industry which produced approximately \$50 million in wages during 1989. From 1980 until 1989, an average of 1,021 houses were constructed annually in the Mimbres Resource Area. This requires an annual production of 50,650 cubic yards for housing purposes, assuming a requirement of 50 cubic yards of aggregate per housing unit. The remainder of the materials produced from BLM sources were used for commercial construction, road construction, and road maintenance.

SOURCE LOCATION

Sand, gravel, and building stone are required materials for building and road construction. These products have a low unit cost at the mine site. The critical components of cost for these resources is the cost of transportation to the site of use (Peterson et al. 1984). Optimally, the sites of production should be as close as possible to the

sites of use. However, this is not always desirable because the environmental costs of production, such as air pollution and reduction in visual quality are not compatible with the sites of use, such as residential development. The direct costs of transportation should be balanced with the indirect costs of production to the community. The cost of transporting aggregate is \$0.20 per yard/mile (Las Cruces Transit Mix 1991). An increase in the haul distance of 30 miles would result in an increase of 80 percent in the cost of aggregate for the concrete producer, an increase of 12 percent for 3,000 pounds concrete delivered to the site, and an increase of 6 percent for a typical 2,000 square feet house footing and slab. Assuming that the costs of production are equivalent at any site and that scarcity of certain types of aggregate is not a factor, the relocation of aggregate pits to site 30 miles more distant would add about \$500 to the cost of an \$85,000 frame house (Cal Pacific Estimators). The effect of an increased cost of aggregate on the costs of road construction and maintenance are dependent on the location of the road in relation to the source of aggregate.

Recreation

There is a substantial demand for recreational activities on public land in the Mimbres Resource Area, with an estimated 360,000 visitor use days for outdoor recreation annually. At the present time, picnicking accounts for about 30 percent of the visitor use days in the Resource Area, this is followed by hunting, hiking, sightseeing, camping, bicycling, and rock climbing. Recent surveys of recreation use indicate a high demand for multi-use areas within 1 hour travel time of urban centers (US Fish and Wildlife Service 1980). Recreational activities that have gained in popularity from 1960 until 1980 include bicycling, running or jogging, day hiking, camping, and backpacking. Hunting, and sightseeing have remained stable during this time period. "Nonconsumptive" uses of wildlife such as bird watching and photography have experienced a slow but steady growth from 1960 until 1980.

The economic benefits of recreational activities are difficult to assess because in many cases market pricing for outdoor recreation does not exist, and some benefits attributable to outdoor

CHAPTER 4

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter analyzes the impacts which would result from implementing any of the four alternative Resource Management Plans (RMPs). The alternatives under consideration are Alternative A, in which there would be no change from the present management; Alternative B, which would provide management to enhance and preserve non-consumptive resource values; Alternative C, which would emphasize the production and economic development of resources from public land; and Alternative D, which would protect important environmental values and sensitive resources, while allowing development to occur. Alternative D, the Resource Conservation Alternative, has been identified as the preferred alternative.

This chapter also analyzes the cumulative impacts resulting from Continuing Management Guidance and Actions which are common to all alternatives, as the impacts are likely to occur no matter which alternative is ultimately selected. This chapter further analyzes the anticipated impacts of the four issues and nine management concerns as they relate to each of the four alternatives. Cumulative impacts are summarized at the end of this chapter.

The cause of an impact is tied to a component of the alternatives as identified in Chapter 2. The effect of the impact is tied to a component of the environment described in Chapter 3. The impacts discussed in this chapter were assessed on the basis of the description of the alternatives presented in Chapter 2. This assessment took into account the mitigation measures and standard stipulations described in Chapter 2, Continuing Management Guidance. Because of those design

features included to minimize environmental impacts, the impacts assessed in this chapter are considered to be unavoidable. If impacts are not discussed, the analysis determined that impacts would not occur or would be insignificant. The following elements of the environment were analyzed but are not addressed since no impacts were identified: climate, topography, fire, prime or unique farmlands, floodplains, hazardous waste, and wetlands. A summary of the impacts by alternative is presented in Table S-2.

The "long-term" for purposes of the analysis in this document is 20 years and the "short-term" is 5 years. The analysis of unavoidable adverse impacts, short-term versus long-term productivity, and irreversible and irretrievable impacts is discussed by alternative, in the impact analysis for each resource rather than under a separate heading. If irreversible and irretrievable impacts or short versus long-term productivity are not discussed in a given section, there are none.

Following selection of an RMP, activity plans with environmental analyses will be developed where needed to implement the RMP and to provide specific guidance for management of affected areas. Specific land-use decisions, however, will be made for areas to be designated as Areas of Critical Environmental Concern (ACECs) and for off-road vehicle designations. The emphasis of this chapter is the general resource allocation issues, rather than site-specific impacts. Site-specific environmental analyses will be conducted for specific projects and proposals prior to implementation.

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CONTINUING MANAGEMENT GUIDANCE AND ACTIONS

This section analyzes the cumulative impacts resulting from Continuing Management Guidance. These impacts are common to all alternatives and would likely occur no matter which alternative is ultimately selected. The estimated surface area disturbed per year over a 20-year period under Continuing Management Guidance is summarized in Table 4-1 (acres calculated from figures in Table 2-1).

TABLE 4-1
ESTIMATED SURFACE AREA DISTURBED PER YEAR

TYPE OF ACTION	TOTAL AREA DISTURBED (ACRES)
Oil & Gas Exploration Wells	0.6
Oil & Gas Access Roads	0.9
Geothermal Exploration Wells	0.3
Geothermal Access Roads	0.9
Mining Notices	30
Mining Plans of Operation	0.9
Mineral Material Sales	83
Fencing	2.4
Pipelines	20
Troughs	0.4
Storage Tanks	0.1
Wells	1
Prescribed Burning	2
Leases-2920	5
Permits-2920	10
R&PPs	80
Linear ROWs	600
Site ROWs	50
Vegetative Products Removal	0.05
Water Spreaders	0.025
Wire Checks	0.2
Wildfires	125
Spring Developments	0.1
Umbrella Catchments	0.1
Exclosures	0.25
TOTAL (Rounded)	1,020

Source: BLM Files 1991

MINERALS

About 3,250 acres of land in the southern portion of the West Potrillo Mountains have high potential for volcanic cinders. About 3,160 acres in the Organ Mountains Wilderness Study Area (WSA), 1,800 acres in the Florida Mountains

WSA, and 500 acres in the Cooke's Range WSA have high potential for the occurrence of locatable minerals. The restrictions on mining imposed by the Interim Management Policy for WSAs would preclude exploration, development, and production of mineral resources in these areas. The Baylor Recreation Area, a withdrawal made under the Classification and Multiple Use Act, contains about 200 acres that have high potential for the occurrence of locatable minerals. This area will continue to be closed and unavailable for exploration and development under the mining laws.

The public land in the West Potrillos represents a major regional source of volcanic cinders. Producers may have to consider mining on State trust land in the West Potrillos. There would not be any immediate or short-term impacts caused by the Interim Management Policy restrictions on mining in the Organs, Floridas, or Cooke's Range. However, there could be long-term, adverse, cumulative impacts if areas like these are unavailable for mineral production. The United States could be deprived of potential sources of base and precious metals.

(See Appendix A for the Mineral Resources Policy and Mineral Leasing Proposals.)

LANDS

Exchanges and sales can be complicated by valuable commodities of sand and gravel that occur in the Mimbres Resource Area, especially in the rapidly growing community around Las Cruces in Dona Ana County. The costs of these commodities, when considered in the appraisal price, could raise the fair market value of the lands. Excavation, to remove sand and gravel, could prohibit future use of lands for commercial and industrial purposes.

Vehicular access in the Mimbres Resource Area could enhance the issuance of linear and site rights-of-way by opening new routes into public land. Some rangeland improvements could block access to right-of-way sites unless special mitigation measures are developed.

CONTINUING MANAGEMENT GUIDANCE

Some withdrawals and land classifications prohibit the BLM from administering specific public land laws within the Mimbres Resource Area, thus creating management conflicts.

Cultural and paleontological resources, WSAs, ACECs, visual resource management (VRM), and special status species (plants and animals) can restrict the issuance of land authorizations (rights-of-way, exchanges, sales, recreation and public purposes) and require special mitigation stipulations. Appendix B contains the lands related policy and regulations.

IN SUMMARY, extraction of sand and gravel for community development degrades lands and could impact the exchange program. Withdrawals and classifications which prohibit BLM from administering specific public land laws could create management conflicts. Vehicular access could enhance right-of-way issuance by opening up new routes into public land. Cultural and paleontological resources, WSAs, ACECs, VRM and special status species (plants and animals) can restrict land authorizations by requiring special mitigation stipulations.

ACCESS

As mineral exploration and development occur, access routes will likely be created which will improve vehicular access to and across existing blocks of public land, particularly where mineral potential is high. Mining notices and plans of operation could provide approximately 22 access routes annually, while oil and gas or geothermal exploration and access roads could produce approximately two access routes per year.

Access to public land will improve with the acquisition of isolated tracts of private and State trust lands throughout the Resource Area, particularly where small parcels control access by numerous existing roads, such as around livestock wells and pasture corners.

Acquisition of lands or easements will generally improve legal and vehicular access while disposal of lands will generally hinder legal access opportunities or potential vehicular access development. Legal access to public land can also be improved by actions of outside agencies, such as easement acquisition by the State Highway

Department, or the construction of new county roads.

Linear rights-of-way often provide excellent access routes to or across public land provided the right-of-way access roads are left open to the public. The majority of linear rights-of-way in the Resource Area are for short developments near towns, but occasional linear projects traverse the entire Resource Area or large portions of it, and these projects can create excellent access routes to vast acreages of public land. Of the 40 projected annual linear rights-of-way, only two to four are likely to produce major access routes that will significantly impact the public. Site rights-of-way often require access roads that can also provide excellent access for the public.

Livestock developments can improve or restrict access depending on the method of construction and type of development. Pipeline developments generally improve access as new vehicle routes are created for pipeline construction or maintenance. Fence construction can impede access if provisions are not made to ensure that existing vehicle routes are not blocked. Access can be maintained where such construction is on public land, but not on private or State trust lands. Livestock developments should provide approximately nine access routes per year. Installation of massive fence arrays characteristic of high-intensity short-duration grazing systems will significantly impede access routes unless special mitigation is included in the implementation of the project, such as provision of alternate access routes.

Control of access to public land by way of private land has been increasing, and can be expected to continue, particularly in Hidalgo and Luna Counties where the county road systems provide service mainly to ranch houses and not necessarily to public land on the ranches. Also, those counties seem willing to allow closure of county roads that provide access to public land at the request of landowners without consideration for the public who use public land, thereby reducing recreation use of public land.

IN SUMMARY, access to and across public land in the Mimbres Resource Area would improve as a result of most minerals actions, land acquisition, right-of-way development, and some livestock developments. Access to and across public land would suffer from certain livestock developments

and from loss of access routes through road closures.

LIVESTOCK GRAZING

Oil and gas and geothermal exploration and development and the access roads built in conjunction with these actions would initially cause some interruption in livestock patterns. The animals would adapt after a short period. Mining notices and plans of operation are more active program in the Resource Area. The potential for disrupting livestock patterns in the area is more likely with a longer adaption period depending on the amount of activity in one area. Under this alternative, approximately 123 acres would be disturbed on a yearly basis, so impacts would be highly localized. No mineral material sales (salable minerals) are usually concentrated in an easily accessible area for the public. If these areas are located within an allotment, the areas and access to these areas could become hazardous to livestock when used frequently. Livestock will normally cease using these areas as the vegetation disappears.

Lands actions include exchanges, sales and acquisition of predetermined areas. If the land becomes part of a grazing allotment, and is determined suitable for grazing by domestic livestock, the number of livestock could be increased on the allotment. By the same token, if land is sold and as a result fenced out of a grazing allotment, the number of livestock grazing that allotment would be reduced. Lease agreements could be negotiated between landowners for control of the base property and livestock. Both of these actions would alter livestock movement and patterns. Exchanges usually do not change the status quo of the allotment as the lands are either acquired by the Bureau or another agency and remain within the allotment. The percent Federal range, or the amount of revenue paid the Federal government would change with all these actions.

R&PP actions, depending on their purpose, can exclude livestock use. Most of these are small areas of 20 acres or less. These would have little effect on a livestock operation as a whole unless they were located in a key area such as adjacent to a water. Many R&PPs are compatible with livestock use. Linear and site rights-of-way would cause an initial disruption of livestock use patterns

while the right-of-way is being constructed. Upon completion of the line or site, normal grazing patterns would resume. The 2920 permits and leases, would cause an initial disruption in livestock patterns for the period of time they were given. Most of these are temporary, and upon removal normal patterns would resume.

New access routes could alter livestock patterns by allowing livestock to move into areas which previously had not been available for livestock use. Access also allows increased human use which could increase the potential for vandalism and animal harassment.

Livestock grazing would continue in the Resource Area. New activity plans will be developed each year with the completion of the monitoring studies on the I category allotments. This usually includes some type of a rest-rotational grazing system. This type of system will allow rest during critical plant growth periods. Rotation plans would provide for increased ground cover, improved plant vigor, and a steadily improving ecological condition class rating. Range improvements needed to accomplish range management goals set in the activity plans described above include fence construction, water developments, and vegetation manipulation through the use of herbicides or prescribed burning. These improvements would disperse livestock and improve use patterns in the long-term. In the short-term, during the construction stage, livestock patterns could be disrupted. An orientation period will be needed to "introduce" the animals to the new developments. For a more detailed description of the impacts of livestock grazing, see the Southern Rio Grande Grazing Environmental Impact Statement (SRG EIS)(BLM 1982) and the Las Cruces/Lordsburg Management Framework Plan Amendment/Environmental Impact Statement (MFPA/EIS)(BLM).

Vegetation sales of native plants in the Resource Area could affect livestock movement with the off-road vehicle use associated with these sales. Yucca stalks, from the yucca sale area, are a favorite livestock supplement but are not considered a main forage plant.

Watershed activities, using water spreaders and wire checks, should improve ground cover and lessen soil loss and as a result improve forage for

CONTINUING MANAGEMENT GUIDANCE

livestock and other uses. With improved livestock distribution, other areas would receive less impact from livestock grazing.

Wildfires would initially remove all current plant growth and force livestock to use other areas. As the plants respond to the burn, livestock will readily move back into the burned area because of all the new lush green growth. Livestock grazing will need to be deferred and then a rotation system implemented to give the new growth a chance to reestablish and reproduce. A minimum of 4 inches of new growth is needed to ensure plant survival. Livestock may need to be kept off an area for a few months to several years depending on the vegetation response to the burn.

Animal damage control actions are usually a benefit to livestock as predators are kept within limits. A few young calves are usually lost to coyotes and other predator species each year. The removal of jackrabbits has been shown to have a larger effect on forage production and utilization in many cases than the use made by livestock. This is especially true in a drought year.

Habitat management plans (HMPs) are interdisciplinary and identify wildlife needs in relation to other uses. Bighorn sheep and livestock do not seem to cohabitate well. Livestock may need to be removed from an area during critical periods such as lambing and breeding. Separate waterings may also need to be developed as diseases may be spread from one species to the other. Other wildlife species seem to coexist with livestock grazing. The continued development of livestock waters has allowed wildlife to stay in more remote areas without having to travel as far for water. Spring developments and umbrella catchments may need to be placed in areas inaccessible to livestock or fenced to prevent livestock from using them. The enclosures are usually small and should not change livestock use patterns.

Areas of significant cultural and historical resources (i.e. forts and Indian ruins) with the potential for livestock damage from tramping or rubbing may be excluded from livestock use. Increased human use in and out of these areas also will disrupt livestock movements.

High use developed recreation areas are fenced or will be fenced from livestock use. Because these areas are small, livestock numbers should remain intact. Facilities needed to work and graze livestock, such as corrals and waters will be placed outside these areas to lessen the potential conflict between humans and livestock. Recreational hunting and livestock grazing will continue to coexist. It is an uneasy peace, with livestock movements being disrupted from off-road vehicle use, camping, parking next to livestock facilities, the discharge of firearms, and reports of livestock being shot. Vandalism usually increases during this period, with bullet holes in water tanks, troughs and windmills and fences being cut and gates left open. WSAs, at the present time, limit off-road vehicle use which can cause problems for a ranching operation. The designation makes range improvement development and maintenance more difficult and time consuming. Monitoring livestock movements, salting and supplementing, will also be more difficult. Limiting vehicles to existing roads and trails will limit livestock and human interaction.

Riparian and arroyo habitats are fragile areas which attract livestock especially when water is present. The livestock cause more damage from tramping than grazing because the areas are usually small. Because of the nature of these areas, especially riparian zones, the potential for improvement is greatest with the removal or at least the rotation of livestock. Livestock can be used as a tool to clear out old growth, change stand structure and open up densely vegetated areas naturally. Fencing, salting and providing additional water outside these areas may be necessary to implement a rotational grazing system.

IN SUMMARY, the overall short-term impacts to livestock grazing would be a result of oil, gas, geothermal, mining actions, R&PPs, rights-of-way, 2920s and vegetation sales through the disruption of livestock patterns. In the long-term, patterns would return to normal. Salable minerals, improved access, bighorn sheep HMPs, cultural and historical areas, developed recreation sites, hunting, WSAs, and riparian and arroyo zones will have short- and long-term impacts to livestock grazing. This will be caused for the most part by

the permanent loss of grazing areas. Livestock activity plans, watershed activities, wildfire, animal damage control and most HMPs could impact livestock grazing by mitigating the impacts to and from grazing in the long-term. These could be short-term impacts from the disruption of grazing patterns.

VEGETATION

Oil and gas activities will cause less than 10 acres of vegetation removal in 5 years. Over the long-term, approximately 30 acres of vegetation will be temporarily lost. All of these acres would be recontoured and reseeded. Successful reclamation measures are highly dependent upon the amount, timeliness and frequency of rainfall. Geothermal permits will cause about 6 acres of vegetation disturbance in the short-term (5 years). Upon development, the long-term temporary vegetation loss is approximately 46 acres. The same revegetation stipulations would apply. Mining activities, a more active program in the Resource Area, would remove vegetation on 37.5 acres each year. Long-term notices and plans of operation will clear 110.95 acres of native vegetation. The revegetation and recontour stipulations would apply. Mineral material sales (salables), usually require the removal of vegetation on a much larger scale in one area. Sale areas can be open for years. Depending on what is removed, the chance of native species returning is somewhat limited. Plants do not reestablish themselves well on rock or the B or C soil horizons. Top soil, in many cases, is stockpiled to be used later in the rehabilitation process. Whenever possible, plants are removed from these areas and made available to the public.

Lands actions, sales, acquisitions and exchanges could have a major impact on vegetation resources. The BLM is required to manage and protect lands under the multiple-use mandate. Land sales and exchanges, in most cases, would remove these lands from this mandate. Community expansion, which entails land development is the primary result of these actions when close to a city. Development activities usually involve clearing, leveling, road and residential development. Many exchanges have resulted in land acquisition by the Bureau which brings these lands and all other acquired lands under the multiple-use and protection mandate.

R&PP actions, depending on the actions, can enhance vegetation values when applied to parks or other natural uses of the area. When issued for cemeteries and schools, vegetation is usually removed on a permanent long-term basis from small parcels of land. An average of 20 acres per year is permitted in this manner. Linear rights-of-way, especially transmission lines, will require a short-term vegetation disturbance when the line is under construction. Upon completion, only the maintenance road will cause continued vegetation damage. Pipelines on the other hand, usually require extensive clearing along the route. Roads constitute permanent vegetation removal when used continually. Even after a road has been abandoned, the scar remains indefinitely. Linear rights-of-way disturb and denude about 600 acres per year. Site rights-of-way, mostly communication sites, disturb and remove vegetation on 50 acres per year. Most of these sites are at the higher elevations where little soil is present. Vegetation reestablishment is very slow. The 2920 permits and leases are usually done for a specific period of time and in the case of apiaries and movie sets cause minimal vegetation removal.

Increased access will cause loss of vegetation along the length of the access (road). If the access is not bladed consistently, vegetation will grow between the tire tracks and vegetation loss will be minimal.

Livestock grazing, when not managed properly, can have a long-term effect on vegetation. The implementation of five new activity plans per year, which will incorporate the principles of rest rotation management will allow the vegetation rest during key growth periods. As the grazing permittees within the Resource Area accept and implement these plans, the vegetation resource and ecological condition should improve. Range improvements needed to make these grazing systems work are fences, pipelines, troughs and storage tanks. Initial vegetation removal will be less than 25 acres per year. Long-term effects should be improved plant vigor, increased ground cover and a long-term improvement in ecological condition. All new watering areas will have a small sacrifice area where livestock will congregate and cause soil compaction. Prescribed fires will rejuvenate the grass species burned and set invading shrub species back to an earlier

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successional stage. For further discussion on the impacts of livestock grazing, see the SRG EIS (BLM 1981) and the Las Cruces/Lordsburg MFPA/EIS (BLM 1984).

Vegetation sales of native plants usually entails about 500 plants being removed each year for landscaping purposes, generally with good survival rates. The areas the plants are legally removed from are either land disposal areas or areas where resource damage would be minimal. Illegal removal of native plants is an increasing problem in the Resource Area.

Watershed activities would have a beneficial impact on vegetation and vegetation management by providing ways to stabilize soils until the vegetation has had a chance to reestablish. This could be accomplished through the use of wire checks, water spreaders and grazing management.

Wildfire, in the short-term, would remove all old and new growth on the plant. Fire is a natural stimulator and plants usually respond immediately even without precipitation. Fires, in the long-term, usually are a benefit to the native vegetation (Wright and Bailey 1982). They remove old decadent growth which can inhibit plant growth and provide needed nutrients for plant reproduction.

HMPs are developed for wildlife. They identify key vegetation types for a particular wildlife species and outline ways to improve these types. HMPs will balance the wildlife use with other uses to improve these vegetation types. Spring developments and umbrella catchments will cause minimal vegetation loss. Enclosures will protect the vegetation within from other grazing uses. Developed recreational use areas are usually high visitor use areas. Vegetation removal for parking lots, trails, and picnic areas is permanent and would impact less than 100 acres. Developed sites channel visitor use into "hardened" areas to prevent damage to adjacent areas. Developed sites through displays and signs, expose and educate the public on the importance of the environment. The current management and implementation of the Organ Mountain Coordinated Resource Management Plan would cause some short- and long-term vegetation loss as areas are developed for more intensive recreation use. These intensive use areas in the long-term would lessen the

impacts on the surrounding areas. Limiting people to existing "roads and trails" would minimize the damage to the vegetation resource. Hunting does not have a direct impact on vegetation, until the hunter sets up camp or drives off the road after his/her kill. This is a short-term impact, and these trails and camps will disappear if not used over and over again. WSA designations provide an extra measure of protection by limiting vehicle use. The maintenance of the vegetation in its present state is one of the objectives in wilderness management.

Riparian and arroyo habitats are critical vegetation zones. Because all the elements needed to improve the status quo are present (water, soil, and sunshine), these zones will improve quickly when managed properly. Grazing use should only be allowed during part of the year or excluded altogether until the vegetation goals are met.

IN SUMMARY, livestock grazing if not managed properly would have the largest short- and long-term impacts to the vegetation resources from permanent vegetation removal. Livestock activity plans, watershed plans, and proper management of riparian and arroyo habitats will benefit the vegetation resources through management and protection in the long-term. There could be short-term impacts from some of the above actions due to vegetation removal to implement new plans and systems.

SOIL/AIR/WATER

Soil

Exploration and development of mineral resources by activities such as trenching, drilling, levelling, site clearing, and construction of access roads would cause soil disturbance on 123 acres per year.

Lands identified for disposal would be subject to soil surface disturbance from activities such as clearing, levelling, and construction. The lands would be the responsibility of State and local governments. Any soil loss from accelerated erosion would be irretrievable. Types of activities on acquired lands would be limited and managed to protect the soil resource.

The impacts on soil from livestock grazing as analyzed in the Southern Rio Grande EIS (BLM 1981) and Las Cruces/Lordsburg MFPA (BLM 1984) were long-term increased ground cover, decreased rangeland in poor ecological condition, increased production of desirable forage species, reduced sediment yield, and reduced wind erosion.

Existing rights-of-way could be subject to surface and shallow subsurface soil disturbance from any new construction and maintenance activities, and increased activity within the rights-of-way by vehicle use.

Developing new vehicle access into inaccessible areas could involve surface disturbing activities such as road construction. New road construction could increase the soil susceptibility to wind and water erosion at least during construction activities.

Vegetation treatments such as chemical brush control and prescribed burning expose the top soil to short-term erosion hazards from water and wind. The erosion potential exists until the sites are revegetated (usually 1-3 years depending on the site and precipitation).

Sale of vegetation allows for digging at five specific locations and some off road travel on small parcels of land. Approximately 500 plants will be removed disturbing approximately .05 acres per year.

Continued implementation of existing HMPs, generally limits or restricts surface disturbing activities within these areas. Habitat improvement projects will disturb approximately ½ acre per year.

Existing recreation areas at Dripping Springs Natural Area and Aguirre Spring Recreation Area have designated and maintained campgrounds, picnic grounds and hiking trails. These designated areas limit impacts to the soil resource. The remainder of the Resource Area is subject to unrestricted recreation uses, and the soil resource may be affected by hiking, camping and other activities on unmaintained sites where use is concentrated (such as hunting camps). However, these activities tend to be of short duration (several days per year).

IN SUMMARY, the soil resource would benefit from acquisition of lands continued implementation of existing HMPs, recreation planning, vegetation treatments, and areas excluded from grazing. Activities such as disposal of lands, vehicle access, right-of-way corridor use, areas open to mineral activity, and vegetation sale areas would cause soil surface disturbance.

Air

Exploration and development of mineral resources would result in surface disturbances such as trenching, drilling, and in some cases construction of access roads on 123 acres per year, which would reduce air quality from dust on these areas while these activities are being conducted. If fluid mineral development occurs, air quality reduction from escaping fumes associated with these activities would occur near the activity.

Lands identified for disposal would not be managed by the BLM. Restrictions on activities would be the responsibility of State and local governments. Activities such as clearing, levelling, and construction may affect air quality by the increase of dust in the air. Improved manageability of acquired lands would restrict activities which may contribute to a reduction of air quality.

Construction and use of vehicle access would increase dust levels in the air where such activity occurs.

Vegetation treatments would have short-term impacts on air quality. Brush control and prescribed burns expose surface soil to wind erosion which causes dust, while smoke from prescribed fires would reduce localized air quality until dispersed.

IN SUMMARY, disposal of lands, increased vehicle access, lands open to mineral exploration and development, and vegetation treatments would affect air quality in localized areas by the increase of dust in the air. With the exception of fluid mineral development activities, the other air quality reductions would be short-term, either during activity or in the case of vegetation treatments 1 to 3 years until regrowth occurs.

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Water

Under continuing management, watershed management would largely be accomplished through coordination with other programs and as a part of all surface disturbing actions. The only existing site-specific activity plan dealing with soil and water resources is the Gila River Coordinated Resource Management Plan. Provisions of this plan would continue to be implemented. This plan benefits the watershed by protecting the surface vegetation which reduces erosion and maintains or improves water quality by reducing the silt load of the river. Other projects which would occur throughout the remainder of the Resource Area will be considered for watershed sensitivity in the affected areas on a site-specific basis. All surface disturbing actions will require appropriate reclamation measures.

Vegetation treatments consisting of prescribed burns and chemical brush control projects will enhance vegetation ground cover which will reduce erosion and allow greater percolation of water into the soil.

Elimination of grazing on 7,826 acres, including the Gila Lower Box, Red Rock Game Farm, Central Peloncillo Mountains, and the Organ Mountains will enhance and protect vegetation ground cover, reduce erosion, and increase percolation of water into the ground.

IN SUMMARY, watersheds within the Gila River Coordinated Resource Management Plan, vegetation treatment areas, and areas excluded from grazing would not be subjected to surface vegetation loss, increased soil erosion or excessive surface runoff. Surface vegetation would increase which would hold the soil and increase percolation of water into the ground.

WILDLIFE

Exploration and development of mineral resources could displace wildlife and reduce wildlife habitat on 123 acres per year. In areas where habitat is limited, surface disturbance activities would decrease the amount of available habitat and disturb wildlife during critical times such as breeding, fawning and lambing, or interfere with travel routes and feeding areas.

Land disposal near urban areas would result in a loss of wildlife habitat from surface disturbances and developments. On small scattered parcels located away from urban centers, isolated areas of island habitats may be altered or disturbed from activities occurring on that land. The acquisition and consolidation of lands would add additional diverse habitats to the public land. These acquisitions can then be managed to protect or enhance the wildlife resource.

The impacts on wildlife from livestock grazing as analyzed in the Southern Rio Grande EIS (BLM 1981) and Las Cruces/Lordsburg MFPA/EIS (BLM 1984) were increased habitat and wildlife diversity and increased forage for big game.

Vegetation treatments such as prescribed burning and chemical brush control would alter wildlife habitat by creating increased vegetation diversity, and reduced erosion on wildlife habitat (Wright 1982). After a vegetation treatment there will be short-term loss of wildlife feed and cover, and temporary (several hours to days) displacement of animals. These impacts will diminish over time as vegetation regrowth and re-establishment occurs.

The continued implementation of existing HMPs will allow for restrictions on types and quantity of activities which could occur on areas which have sensitive species and their habitats. Continued implementation of HMPs will protect and enhance wildlife habitat.

IN SUMMARY, disposal of lands and exploration and development of mineral resources would affect wildlife habitat through habitat disturbances. Land disposal would affect wildlife habitats over fairly large areas, while mineral development activities would affect only small, localized areas. Implementation of existing HMPs and vegetation treatments would enhance or alter wildlife habitat over large areas.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Since mining notices are nondiscretionary actions, they have the potential to disturb cultural resources throughout the Mimbres Resource Area.

Although each notice disturbs less than 5 acres, they have the potential to destroy historic mining features, prehistoric rock art sites, Mogollon village sites, and other types of cultural resources. Ground disturbance related to mining activity that can affect cultural resources includes but is not limited to, blasting, construction of new access roads, creation of staging areas, core drilling, and trenching with heavy machinery. Any degradation of cultural resources would result in irreversible and irretrievable losses of information.

Acquisition or disposal of land can cause varied impacts to cultural resources. For example, acquisition of a significant Apachean site or Paleoindian camp or kill site would enhance the diversity of sites within the Mimbres Resource Area since few sites of this type are currently documented.

Impacts to cultural resources eligible for the National Register located within lands identified for disposal are mitigated through excavation and other methods. These mitigative efforts result in determinations of "no adverse effect through data recovery." However, these data recovery methods treat only portions of sites and some data is lost. In addition, modern excavation techniques will be considered primitive by future researchers.

The effects of vegetation use through livestock grazing are generally low, except where condition combine to concentrate cattle. Proximity to water, certain types of forage, natural barriers, or fences can result in channeling cattle to result in intensive trampling of artifacts and archeological features, as well as increased site erosion.

There are currently four Holistic Range Management (HRM) systems in the Mimbres Resource Area. One HRM objective is to increase cattle hoof action for soil aeration and reseeding. It is suspected that hoof action is damaging to cultural artifacts and features. Hoof action can break artifacts, move artifacts horizontally and vertically, disturb cultural features, and cause additional impacts of this nature. Archaeological studies of HRM systems are planned in consultation with the New Mexico State Historic Preservation Officer (SHPO). The 5-year studies will monitor the effects of trampling on cultural resources within the HRM systems.

Protection of riparian areas in many cases reduces erosion of archeological sites. Riparian areas typically have high concentrations of historic and prehistoric sites which can be damaged by erosion.

IN SUMMARY, mining notices are nondiscretionary action and can result in disturbances to cultural resources. Acquisition of significant cultural sites enhances the diversity of sites within the Mimbres Resource Area. Disposal of significant sites reduces site diversity on the Mimbres Resource Area and can result in the loss of important site data. Effects of livestock grazing are generally low level except where livestock are concentrated and trampling impacts occur to artifacts and features. Protection of riparian areas can reduce erosion at associated cultural sites.

RECREATION

Lands actions will enhance recreation quality for urbanites when parks are created on lands disposed of for community expansion including R&PP parcels. Some school facilities on R&PP lands will also provide expanded recreation facilities such as soccer fields, basketball courts, and playgrounds. Disposal of lands near cities will make many recreation opportunities more accessible, with houses adjacent to public land having backyard opportunities for walking, bike or horse riding, and numerous other activities. Acquisition of lands by the BLM will enhance recreation opportunities and management on the public land by reducing boundaries between public and non-public lands and subsequent potential conflicts between recreationists and other landowners. Public acquisition of key parcels in special recreation management areas such as the Gila Lower Box and Fort Cummings will not only reduce potential conflicts but will provide more alternatives for recreation facility development.

Recreation users will benefit from improved access as a result of new construction of access roads associated with mineral exploration and development, livestock developments, and right-of-way access roads. With improved access, opportunities for dispersed recreation such as hunting, hiking, driving, and camping will increase annually. The quality of many recreational activities will also improve, both because of dispersal of recreationists over more public land

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and because new areas will be opened up, some of which will have higher quality of recreation resources than existing areas. For example, new sites may become accessible for rockhounding that provide specimens that are unavailable or that are better than similar rocks available elsewhere.

Livestock grazing can have both beneficial and detrimental effects on recreation. Most vehicle access routes to or across public land involve ranch roads, and many recreationists such as hikers and hunters use windmills or other livestock facilities for orientation when they are in the field. Cattle trails are often good starting points for recreationists, especially in thorny brush or mountainous terrain. Livestock grazing can benefit wildlife-based recreation by dispersing water sources and allowing for increased habitat diversity, particularly where rotational grazing systems are used. Some recreationists prefer to not have cattle disturb their solitude, and consider cattle to hinder their appreciation of the natural world while other recreationists may enjoy the sight of cattle in the outdoors. Once again, rotational grazing systems maintain both types of opportunity on a grazing allotment at all times.

Vegetation treatments will have long-term impacts to wildlife-based recreation opportunities by increasing ecotonal habitats and diversity of habitat types, and improving production of forage and wildlife.

Watershed management will improve soil stability, impacting vehicle recreation by reducing damage to roads and trails. Soil stabilization and subsequent vegetation recovery will allow increased opportunities for certain recreational pursuits such as pronghorn hunting, which are dependant on maintenance of stable, good condition grasslands. Rockhounding quality may decrease as vegetation cover rebounds on treated watersheds.

The quality of hunting and non-consumptive wildlife recreation such as bird watching and wildlife photography will improve as wildlife habitat is improved by prescribed burning, spring developments, water catchments, and enclosures. Wildfires will also improve the quality of hunting and other wildlife-based recreation by increasing habitat diversity and rejuvenating vegetation. Cumulatively, these developments will gradually

improve wildlife habitat diversity and subsequent wildlife recreation quality throughout the Resource Area.

Recreation resources will benefit from ongoing cultural and paleontological resource management, particularly the development and interpretation of the Dripping Springs Natural Area, La Cueva, Fort Cummings, and the Paleozoic Trackways Site. New public recreation opportunities will continue to arise, and existing opportunities will improve in quality as these and other sites are developed. Protection of the majority of sites will maintain the potential for recreational enjoyment of these resources into the future.

Riparian habitat management would produce excellent benefits to recreation opportunities, both by allowing reestablishment of riparian communities that support the highest wildlife species diversity, and by improving the quality of riparian habitat-related recreation. Bird watching and other forms of non-consumptive wildlife recreation as well as hunting and fishing will improve in riparian areas as stream banks are stabilized, and vegetation species and structural diversity increase. Riparian habitat recovery will benefit hunting on lands near riparian areas as well, since numerous wildlife species use riparian areas as a portion of their habitat.

IN SUMMARY, recreation opportunities will change on disposed lands from undeveloped recreation such as hunting and mountain biking to developed recreation including city park-related recreation such as sports and playground play plus other forms of urban recreation like road biking. Acquisition of lands and access plus right-of-way development will benefit both dispersed and developed recreation on public land by making more land available for both types of recreation on public land. Watershed management, fire management, wildlife habitat management, and riparian habitat management will improve the availability and quality of backpacking, camping, sightseeing, hunting, picnicking, wildlife photography, bird watching, and other forms of dispersed recreation. Fire management, wildlife habitat management, wilderness management, and riparian management can all detract from rockhounding quality over time.

VISUAL RESOURCES

Visual resources will be degraded by minerals actions including leasable, locatable, and salable mineral exploration and development. Leasable and salable mineral exploration and development activities are most likely to occur in intermountain basins where VRM classes are generally III or IV. Class III areas allow moderate changes in the basic visual elements, while Class IV areas allow changes in the basic visual elements to dominate the natural landscape; so leasable and salable activities over most of the Resource Area will not conflict with VRM Classes. Furthermore, most of the hills and mountains in the Resource Area, which reclassified as VRM Class II, are closed to leasing and have low potential for oil and gas development because of the thick layers of rock above any potential oil-bearing deposits. Areas within a few miles of the Mesilla Valley that are in VRM Class II have high potential for geothermal resource development, which would have impacts on scenic panoramas of the public land from Las Cruces. Locatable mineral exploration and development are much more likely to conflict with VRM guidelines and cause detrimental impacts to visual resources, by altering landforms, creating contrasts in colors of scenic viewpoints, and altering vegetal texture and color. First, locatable minerals are most likely to occur in quantity along limestone/igneous interfaces, commonly in hills, which are generally VRM Class II areas where changes in the basic visual elements should not be evident. Second, locatable mineral exploration and development under the 1872 mining law require only a notice to conduct mineral exploration, and can actually occur without any authorization from the BLM even if the action causes visual resource disturbance. Third, very little of the Resource Area is closed to locatable mineral entry.

Lands actions will have both detrimental and beneficial effects on visual resources. Disposal of lands will end the BLM's ability to manage those lands for visual resources, but most of the disposal lands in the Resource Area are VRM Class III or IV. Acquisition of lands will conversely allow the BLM to manage larger blocks of land under VRM guidelines, particularly scenic hilly areas where isolated parcels of currently non-Federal land may be developed in ways that detract from the scenic quality of large acreages of adjacent public land.

Rights-of-way will be planned so as to minimize and mitigate effects on visual resources by avoiding or circumventing sensitive scenic areas, or by including rehabilitation and reclamation in project planning.

Development of access routes to or across public land will not have significant adverse impacts on visual resources because any planned access routes can be designed to avoid and mitigate disturbance of the basic visual elements in the landscape. Additionally, the majority of projected developments that will include access routes will occur in VRM Class III or IV areas, as VRM, Class I or II lands will be ROW exclusion or avoidance areas.

Livestock grazing can have profound influences on both color and texture of visual resources. Removal of vegetation by livestock can change the color of the landscape from that of the dominant vegetation to that of the soil. The landscape texture can be altered as livestock grazing changes vegetation types from grassland to bare ground, dunes, or shrublands. Different grazing levels can lead to fenceline contrasts causing colors and textures in the landscape.

Vegetation treatments can return ground cover to barren areas and allow replacement of shrubs with grasses. Although vegetation treatments will be planned and can create short-term visual contrasts by killing brush, vegetation treatments will allow improvement in vegetal cover and resultant scenic quality. Vegetation treatments will be planned and conducted to minimize sharp lines that would delineate treatment boundaries.

Watershed management plans will provide direction for recovery of vegetation resources that will result in more natural appearances of visual resources in the Resource Area, particularly on hills where key viewing areas are large. Mountain ranges such as the Cooke's Range which have large areas with soil erosion problems will appear more natural, and visual resources will be greatly enhanced.

Wildfires and prescribed burning can cause alterations in visual resources over short periods of time, particularly while fires are burning and shortly thereafter. After fires burn, the native vegetation will return in a more vigorous state

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than the pre-burn condition, and the landscape will benefit over the long-term.

Recreation developments can have slight adverse impacts on visual resources, but will be planned to blend closely with existing landscapes and avoid any changes in the form, line, texture, and color of the landscape. The locations, forms, color, and texture of any recreation developments will be planned to conform closely with the natural appearances of the public land.

Wildlife habitat management, wilderness management, special status species management, and riparian habitat management will all improve the natural appearance of the landscapes on public land.

IN SUMMARY, any surface or vegetation disturbing action, in hills areas, could degrade visual resources and will require careful project planning to conform with VRM Class II guidelines. However, many actions can occur over most of the Resource Area within the existing VRM Class III and IV guidelines.

WILDERNESS

Mineral development could occur in WSAs and wilderness areas on unpatented mining claims subject to the mining laws. Such mining would degrade wilderness quality by disrupting the naturalness, solitude, and opportunities for primitive and unconfined types of recreation. Recontouring after any mining operations could be required to protect the landscape, and reclamation bonds could be required to ensure that necessary reclamation work is completed. Mineral leasing in WSAs and wilderness areas would not likely be authorized. Mineral leasing would also disrupt the naturalness, solitude, and opportunities for primitive and unconfined types of recreation. Mineral leasing for common variety minerals would not be allowed in a WSA or wilderness area.

Land acquisition would have beneficial effects on wilderness resources and management by enabling the BLM to consolidate Federal ownership in wilderness areas. Acquisition would ensure that any uses of those lands would be compatible with the maintenance of the wilderness resource. Wilderness lands would not be disposed.

Increased access opportunities to wilderness areas could increase human impacts on these areas, and will have to be carefully monitored to ensure that Limits of Acceptable Change (LAC) thresholds are not surpassed. Improved access will enable more recreationists to use wilderness areas, and increased access routes can be used to disperse users more evenly around wilderness areas, enhancing opportunities for solitude among wilderness users.

Livestock grazing can detract from wilderness qualities. Livestock facilities are often highly visible from large viewsheds, and the presence of facilities, cattle, or evidence of grazing use can reduce the appearance of naturalness within a portion of a wilderness area. Cattle can also affect the solitude of wilderness users. Although livestock grazing is allowed to occur within WSAs and wilderness areas, cattle are exotic components of the ecosystem and support facilities are human imprints in natural areas. Careful management of grazing practices can minimize adverse effects on the natural environment. In some cases, livestock management practices can be used to improve the natural conditions of an area. In already modified environments, better livestock distribution, seasons of use, fencing and land treatments can be used to bring about improvement over existing unnatural conditions.

Fire management can beneficially impact wilderness resources by renewing plant growth and leading to increases in natural biological diversity as vegetation composition and structure are altered. Most wildfires in natural areas will require only limited suppression efforts, as grasses make up the major fuel types, and most wilderness areas within the Resource Area will be surrounded by shrublands that do not have sufficient fuel loads to carry fires. Prescribed burning could be used in wilderness areas to enhance or maintain fire dependant ecosystems.

Wildlife habitat management will only be allowed in wilderness areas if it enhances wilderness values. Although some management efforts such as water developments may be noticeable from small areas within a wilderness, design and location of such developments can be planned to mitigate any impacts to wilderness resources, while the far-reaching effects of such developments will enhance wilderness values such as wildlife and

endangered species over large areas. Enhancement of wildlife habitat within wilderness areas will provide long-term benefits to natural values and result in recreation opportunities.

Recreation management will enhance wilderness resources by ensuring that vehicles stay on designated routes, and providing parking areas and access routes outside of wilderness areas so that recreationists can enjoy the wilderness without causing degradation of wilderness values. Recreation management will be the main tool for ensuring that non-consumptive uses of wilderness conform to wilderness management policy and guidelines and do not degrade wilderness values.

IN SUMMARY, mineral development in wilderness areas could degrade wilderness values by disturbing natural systems and scenic quality, but such actions should be mitigated because of the existing wilderness management policy. Lands actions would benefit wilderness values by consolidating ownership and management. Livestock grazing management could enhance or detract from wilderness values on a case by case basis, and possibly have both effects simultaneously on disparate portions of a wilderness area. Access development and fire, wildlife habitat, and recreation management would be the primary tools for enhancing natural qualities of wilderness areas

SPECIAL STATUS SPECIES (T&E)

Most minerals exploration activities occur under a mining notice. The BLM has no discretionary authority to approve or disapprove activities conducted under a notice. Even though a claimant is legally obligated to abide by the Endangered Species Act, the BLM has no authority to prevent activities which may affect a listed species or its habitat. Therefore, exploration and development of locatable minerals on areas less than 5 acres could result in site-specific special status species habitat degradation from access construction, site levelling, mining, and deposition of tailings (Sandoval 1982). Activities on 5 acres or more require a plan of operation which will be analyzed by an environmental assessment to mitigate the effects of mining activity.

Acquisition of lands would improve manageability by blocking up land and may provide additional special status species habitat as well as provide a buffer area near sensitive habitat types.

Livestock grazing on habitats for special status animal species (such as bighorn sheep) could result in habitat disturbance. Livestock grazing on habitats for special status plant species could also result in habitat disturbance (from grazing or trampling). Most listed plant species are not preferred livestock forage (many are cacti). Properly managed grazing should have little or no detrimental effect on special status species. In areas where conflicts between special status species and livestock grazing are identified through monitoring, actions would be taken to reduce or eliminate adverse impacts to those species.

The continued implementation of existing HMPs would limit the scope and extent of activities which occur in areas with special status species.

IN SUMMARY, acquisition of lands and management of existing HMPs would enhance special status species and their habitat. Mineral development activities may have detrimental effects on special status species and their habitat.

RIPARIAN AND ARROYO HABITATS

Even though these areas would be avoided, exploration and development of mineral resources could cause surface disturbing activities in small localized areas. Construction, levelling, trenching, and mining or drilling would result in removal of vegetation, affect streamside stability, and potentially reduce water quality.

Improved manageability of acquired lands would protect and enhance riparian resources by restricting the type and amount of activity which may occur.

Vegetation treatments limited to prescribed burning will stimulate growth resulting in a healthier, vegetationally diverse riparian and arroyo habitat areas (Wright 1982).

The continuing implementation of existing habitat management plans which have riparian areas will

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limit the type and quantity of activities which occur near riparian areas within HMP boundaries.

The development and implementation of recreation plans could result in recreational activities being limited in scope and extent to designated areas near riparian areas.

Elimination or management of livestock grazing in riparian and arroyo habitat areas would result in increased vegetation growth and diversity, improved water quality, streambank stability, and decreased soil erosion.

IN SUMMARY, acquisition of lands, recreation planning, management of existing HMPs, and vegetation treatments would benefit riparian and arroyo habitat areas. Mineral activities and grazing activities may disturb or degrade riparian and arroyo habitat areas.

SOCIAL AND ECONOMIC CONDITIONS

Mineral exploration will continue to be a significant activity in the Mimbres Resource Area. Surface disturbance from these activities could impact other resource uses and reduce the value of the lands impacted. Lands may be withdrawn from mineral lease and exploration in order to protect other resource values; the resulting closures to mineral exploration and leasing may have negative impacts on the economic base.

Although the activity of the minerals industry has been reduced by economic factors, the contribution of this industry is still significant, and will continue to provide income and employment in the Mimbres Resource Area.

The BLM will continue its policy of acquiring and disposing of public land in order to enhance administration and to provide land for private ownership where this is desirable. The continuing policy direction is to offer public land in the Las Cruces area for exchange or sale in order to accommodate urban growth. This will have positive economic effects by increasing the property tax base in Dona Ana County, and by reducing development pressure on agricultural land. The availability of this land will create new opportunities for economic growth and

development. Some possible negative effects are the eventual loss of grazing on the land as it is developed and conflicts between urban development and mineral materials. The value of the land for development will greatly exceed grazing and mineral values, so these losses are considered to be insignificant. Land acquisitions are primarily accomplished through exchange with private owners or the State Land Office for the purposes of obtaining access to isolated public land, or for protecting significant resource values. These actions can be beneficial to the economy by allowing recreational or permittee entry to previously inaccessible lands and by permitting more efficient management of resources.

Land withdrawals from multiple-use are another significant activity. Withdrawals may be made for the purpose of protecting significant resources and for public health and safety. There may be some negative economic impacts which result from the loss of mineral development opportunities or grazing leases or permits; however, the social benefit that results from the withdrawals can be significant (see Table 2-8).

The BLM will continue the policy of granting rights-of-way on public land for qualified applicants. The use of rights-of-way for utilities and other purposes has a large, but diffuse impact on the local economy. Some land may be increased in value through proximity to power and other rights-of-way. In certain cases, some negative effects may be caused through construction or use of rights-of-way. These could include soil erosion, reduction in visual quality, and reduction in adjacent property values. Other types of rights-of-way or permits are for facilities such as communications sites, hot mix bituminous plants, and agricultural uses, such as apiaries. These uses may cause negative effects to the extent that they interfere with other resource uses; however, there are significant economic benefits.

The requirements for access to public land are determined through the planning process. Access to public land will increase recreation and use of resources and provide benefits to the economy. Access is acquired through land exchange or purchase of easements. Significant costs may be incurred by the government during the acquisition of easements. Some landowners will benefit from these expenditures.

There are 347 livestock grazing leases in the Mimbres Resource Area. At the present time, 385,282 animal unit months (AUMs) of grazing are allowed on public land in the Mimbres Resource Area, and an additional 4,595 AUMs are in the inactive or suspense category. Approximately 45 percent of the range beef produced in the Mimbres Resource Area is produced on public land, for an average value of \$11 million per year. The economic importance of livestock grazing is concentrated in the smaller communities of the Resource Area, where it may constitute a significant portion of the total economy. The range livestock industry is a traditional activity in the non-irrigated portions of the Mimbres Resource Area, and has remained a significant part of the culture in the entire region.

Livestock use adjustments will be made as required to prevent resource damage or to utilize forage more efficiently. These adjustments are not expected to have major effects on livestock production or on agricultural income in the Resource Area. Rangeland monitoring studies will continue to be the basis for designing improvements and making livestock use adjustments.

Vegetation sales will continue in the Mimbres Resource Area. The social value of plants for "desert landscaping" is important for local ambiance and water conservation. The economic effects of vegetation sales are insignificant to the total economy.

The majority of the activities which protect soils, air, and water involve control and rehabilitation of surface disturbing activities in mining, construction, and rangeland improvement projects. This may involve higher costs to the permittees, although these costs are not generally high in relation to the value of the project. Watershed management may require modifications in grazing practices and reductions in livestock production.

The BLM will continue current policies of fire management. This is beneficial to the extent that resources and improvements are protected. A small amount of employment is generated through fire prevention and suppression activities.

Wildlife habitat protection is significant to the social and economic conditions in the Mimbres

Resource Area. Hunting and wildlife appreciation make a significant contribution to the local economy. The presence of wildlife contributes an intangible benefit to the ecology and character of the area.

Six HMPs will be maintained as part of the continuing management in the Resource Area. Implementation of HMP goals may cause conflicts with other resource uses, such as livestock grazing and mining; however, the economic consequences of these conflicts are slight compared to the value of preserving habitat and populations of sensitive species.

The goals of BLM policy are to manage cultural and paleontological resources in a manner that protects and provides for their proper use. The great value of these resources is for education and research. They represent a store of knowledge that can never be reclaimed once it is lost. A growing number of tourists and visitors are attracted to cultural sites. Some sites in the Resource Area have great interpretive potential. Tourism associated with these sites would be an economic benefit to local communities. There may also be conflicts with other resource uses which cause negative economic impacts. These are generally not significant in comparison to the cultural and economic values which protection and interpretation of sites provide.

The major cultural and paleontological resource activities in the Resource Area are inventory, evaluation, and protection of cultural and paleontological resources, and resource stabilization. These are accomplished through cultural resource management plans. Employment generated from these activities produces direct economic benefits, and there are long-term social benefits from the preservation of scientific and historic knowledge.

The BLM provides recreational opportunity to a growing population in the Mimbres Resource Area. Developed sites will continue to be operated in the Organ Mountains. Dispersed recreation is available throughout the Resource Area. The New Mexico State Planning Office has identified multi-purpose and day-use recreation areas within 1-hour's travel time of urban areas as the greatest need for the recreation future. The demands for recreation are quite significant and will continue

CONTINUING MANAGEMENT GUIDANCE

to grow as the population of the Resource Area becomes concentrated in the urban and suburban areas of the Rio Grande Corridor. A wider population, including El Paso, Texas and Juarez, Mexico, will continue to seek a broad spectrum of recreation opportunity in the Resource Area. The increased demand for recreation will cause conflicts with other resource users and demands for access to public land. The result of these conflicts may be economic losses to some resource uses while recreation based activities provide economic benefits to other segments of the economy.

The social and economic benefit of the visual resource is real, but difficult to quantify. The cultural images of our society are strongly influenced by the visual character of the landscape, and property values can be influenced by the quality of visual resources. Management goals for visual resources are to protect the most outstanding visual resources and to restrict activities which have undue adverse effects in other areas. This can cause some conflicts with certain resource uses and may restrict activities in certain areas.

BLM policy is to protect habitat for sensitive, rare, and endangered species. This is done by evaluating the impact of all proposed actions on these species and by implementing appropriate management to protect habitat. The benefit of maintaining biological diversity, and the native complement of species in the Resource Area is difficult to assess. Some negative economic effects

may be caused by eliminating activities at increased cost to permittees or other users.

Riparian areas are extremely limited in size and extent in the Resource Area, yet they are significant for wildlife, the maintenance of water quality and stream flow, and forage production. The BLM goals are to preserve these values through management. This may cause negative economic impacts on some resource uses through limitations of activities in riparian habitats.

IN SUMMARY, the BLM will continue to provide opportunities for minerals exploration and leasing, livestock grazing, vegetation sales, rights-of-way, and other leases through the provisions of legislation and Department of Interior regulations. There will be continuing land ownership adjustments to improve the efficiency of public land management, to provide land needed for public use, and to meet the growing requirements for private ownership. Wildlife, including sensitive species and critical habitat areas will continue to receive the protection required by Federal statutes and regulations. There will be continuing wildland fire management, and protection of the watershed, soil and air resources as required by Federal statutes and regulations. Recreation activities will be provided to the public, and there will be continuing efforts to protect cultural and paleontological resources. Visual quality management will be a high priority in the Resource Area. WSAs will be protected in their present state until Congress makes a determination of their status.

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MINERALS

Fluid Leasable Minerals

OIL AND GAS

The land identified for disposal and acquisition has low potential for the occurrence and development of oil and gas so the loss (and gain) of these fluid minerals from public ownership would be insignificant. About 124,700 acres having moderate potential for occurrence would remain closed to leasing and unavailable for exploration.

Land identified for the acquisition of vehicular access and land adjacent to these areas has low potential for the occurrence and development of oil and gas. Consequently, new opportunities for exploration on this land would be insignificant.

Table 4-2 lists the acreage of public land available for oil and gas development in comparison to the oil and gas potential.

GEO THERMAL

Land identified for disposal in the vicinity of Las Cruces contains 25,000 acres of high geothermal potential and 22,000 acres of moderate geothermal potential. Respectively, this represents 42 percent of the total high potential lands and 9 percent of the total moderate-potential lands. The transfer of these lands out of Federal ownership would preclude the opportunity for public leasing and development of these resources. Retaining the mineral estate in Federal ownership could lead to potential split-estate conflicts if the surface owner does not concur with geothermal development. However, low-temperature, direct-use geothermal applications such as space heating and domestic hot water heating can be compatible with surface uses.

About 2,700 acres having moderate potential for occurrence would remain closed to leasing and unavailable for exploration.

Table 4-3 lists the acreage of public land available for geothermal development compared to the potential for geothermal resources.

Nonenergy Leasable Minerals

The land identified for disposal has low potential for the occurrence and development of non-energy leasable minerals so the loss of these resources from public ownership would be insignificant. About 409,700 acres having low potential for occurrence would remain closed to leasing and unavailable for exploration.

Table 4-4 lists the acreage of public land that would be available for non-energy leasable mineral development compared to the potential for these resources.

Locatable Minerals

About 3,500 acres of land (7 percent of the total high potential lands) identified for disposal west of the southern San Andres Mountains have high potential for the occurrence of locatable minerals. The United States usually reserves the mineral estate on lands having high mineral potential. If, for some reason, the United States does not retain the mineral estate, this land would not be available to the public for exploration and development. This would not result in any immediate or short-term impacts. However, there could be long-term, adverse, cumulative impacts if areas like these are removed from public ownership. It is then possible that exploration, development, and production may not occur thus depriving the United States of potential sources of base and precious metals. If the United States reserves the mineral estate, there could be conflicts between the mining claimants and the

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TABLE 4-2
AVAILABILITY OF LAND FOR OIL AND GAS DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
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	<u>POTENTIAL FOR OCCURRENCE</u>			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	1,841,900	1,516,400	0	3,358,300
Open/Stipulations	200,100	161,300	0	361,400
Open/No Surface Occupancy	3,300	5,600	0	8,900
Not Open to Leasing	285,000	124,700	0	409,700
Nondiscretionary Closure (withdrawals)	168,500	408,900	0	577,400
Total	2,498,800	2,216,900	0	4,715,700

Source: BLM Mimbres Resource Area GIS Data Base, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-3
AVAILABILITY OF LAND FOR GEOTHERMAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
ALTERNATIVE A

	<u>POTENTIAL FOR OCCURRENCE</u>			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	3,067,700	201,900	56,700	3,326,300
Open/Stipulations	311,800	48,800	0	360,600
Open/No Surface Occupancy	8,900	0	0	8,900
Not Open to Leasing	407,000	2,700	0	409,700
Nondiscretionary Closure (withdrawals)	574,700	0	2,700	577,400
Total	4,370,100	253,400	59,400	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-4
 AVAILABILITY OF LAND FOR NONENERGY LEASABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
 (ACRES OF FEDERAL MINERAL ESTATE)*
 ALTERNATIVE A

	POTENTIAL FOR OCCURRENCE			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	3,680,500	15,400	0	3,695,900
Open/Stipulations	0	0	0	0
Open/No Surface Occupancy	0	0	0	0
Not Open to Leasing	409,600	0	0	409,600
Nondiscretionary Closure (withdrawals)	577,400	0	0	577,400
Total	4,667,500	15,400	0	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

surface owner concerning surface damages that would result from mining operations. Land identified for acquisition has low potential for locatable minerals so the new opportunities for mineral exploration on this land would be insignificant.

Land identified for the acquisition of vehicular access and land adjacent to these areas have low potential for locatable minerals. Consequently, new opportunities for mineral exploration on this land would be insignificant.

Table 4-5 lists the acreage of public land available for locatable mineral development in comparison to locatable mineral potential.

Salable Minerals

About 35,000 acres of land proposed for disposal are located near Las Cruces and have high potential for the extraction of sand and gravel. This represents about 74 percent of the high potential sand and gravel between Las Cruces and Anthony. About 23,000 acres (or 49 percent of the high potential sand and gravel near Las Cruces) that are proposed for disposal are located within 10 miles of Las Cruces. Retaining the

salable minerals in Federal ownership would not resolve this problem. Potential conflicts that would arise from the split ownership of the surface estate and the mineral estate in an area of city expansion would probably prevent the mining of sand and gravel.

Table 4-6 lists the acreage of public land available for salable mineral development in comparison to salable mineral potential.

IN SUMMARY, under Alternative A, land identified for disposal has low potential for the occurrence and development of oil and gas.

Land identified for disposal in the southern San Andres Mountains has high potential for the occurrence of locatable minerals. The loss of these minerals from public ownership would preclude exploration and development. If the mineral estate is reserved to the United States, there could be conflicts between the surface owner and the mining claimant.

Land identified for disposal near Las Cruces has moderate to high potential for geothermal resources. The loss of this mineral resource from public ownership would preclude the opportunity

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TABLE 4-5
AVAILABILITY OF LAND FOR LOCATABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
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	<u>POTENTIAL FOR OCCURRENCE</u>			
	LOW	MODERATE	HIGH	TOTAL
Open	3,718,200	283,400	48,600	4,050,200
Nondiscretionary Closure (withdrawals)	599,000	30,200	3,500	632,700
Total	4,317,200	313,600	52,100	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-6
AVAILABILITY OF LAND FOR SALABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
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	<u>POTENTIAL FOR OCCURRENCE</u>			
	LOW	MODERATE	HIGH	TOTAL
Open	3,579,600	203,800	60,300	3,843,700
Nondiscretionary Closure (withdrawals)	836,600	0	2,600	839,200
Total	4,416,200	203,800	62,900	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

for leasing and development. If the geothermal estate is retained in Federal ownership, development of the geothermal resources could lead to conflicts between the surface owner and the geothermal lessee. However, geothermal development can be compatible with surface uses.

Disposal of land near Las Cruces that has high potential for the development of sand and gravel would preclude the development of this mineral resource. Retaining the salable minerals in Federal ownership would lead to potential split-estate conflicts because mining of mineral materials is not compatible with surface use.

LANDS

Ownership adjustments under Alternative A would be limited to existing plans which deal mainly with lands in Dona Ana County. The Mimbres Resource Area would continue to be responsible for the management of the majority of the small and isolated public land tracts within Luna, Hidalgo, and Grant Counties. These lands would continue to create management problems because of limited or no legal access. By exchanging or selling 77,145 acres of public land, the BLM would be exchanging parcels which are difficult or uneconomical to manage or needed for urban expansion. These lands are valuable to the City of Las Cruces for potential annexation and future city expansion. Every effort would be made not to create split-estates, thus creating management problems.

The acquisition of approximately 18,980 acres of State trust land and 13,710 acres of private land for historic, sightseeing, and recreation areas would increase the public land acreage, but would not impact the land resource. Blocking up public land through acquisition would improve manageability.

The multiple-use management of approximately 2,976,675 acres of public land would allow the Mimbres Resource Area to authorize multiple-use actions providing opportunities for companies and individuals to use the public land.

Legal access to certain public land would enable some applicants to locate site rights-of-way easier and coordinate with only one landowner. Administrative or legal access across private land

to public land creates better management conditions for BLM.

The issuance of rights-of-way allows for the orderly development of public land and would be continued under Alternative A on a case-by-case basis. Existing right-of-way corridors, consisting of approximately 61,405 acres, would continue to be used. No new right-of-way grants or easements would be allowed in the Central Peloncillo, Gila Middle Box and Organ Mountains ACECs because this would limit the BLM's ability to effectively manage these areas.

IN SUMMARY, under Alternative A, land ownership adjustments would occur on approximately 1.4 percent of the total public land in the Mimbres Resource Area. Approximately 32,690 acres of State trust and private lands would be acquired to improve manageability. Approximately 2,976,675 acres of public land would be managed for multiple-use under BLM administration. This would block up public land and improve manageability. No new right-of-way grants or easements would be allowed in the Central Peloncillo, Gila Middle Box or Organ Mountains ACECs because this would limit the BLM's ability to effectively management these areas.

ACCESS

Under Alternative A, access would be lost to 77,145 acres of public land in Dona Ana and Hidalgo Counties through disposal. Access routes to adjacent public land in the Organ Mountains, Franklin Mountains, and Animas Mountains would also be lost without specific easement reservation. Major access routes such as county roads on disposed lands would continue to provide access to adjacent public land. Acquisition of approximately 18,980 acres of State trust land and 13,720 acres of private land would allow BLM to improve access to and across public land, particularly in the Organ Mountains, the West Potrillo Mountains, and the Aden Lava Flow. Acquisition of private land along the Rio Grande near Broad Canyon would provide legal public access to approximately 8 miles of the river and adjacent public land.

Existing vehicle designations would continue to limit access where vehicle closures or limitations

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are in effect while access to and across public land that are either designated as open or undesignated would maintain excellent access on the public land.

Continued acquisition or development of access at the current rate would result in approximately one access route per year. When combined with the closure of traditional access routes such as county roads, there would probably be little net change in access to or across public land in a given year, but there would be a gradual decline in legal and vehicular public access to public land over a long period of time as a result of access efforts alone. Development of new rights-of-way and exploration and development of leasable, salable, and locatable minerals would increase legal and vehicular access to and across public land by up to 30 routes per year, although most of these access routes would be relatively minor (only a few miles or less of new road).

IN SUMMARY, access would be lost to and around disposal areas but would gradually improve over public land in the Resource Area as a whole.

LIVESTOCK GRAZING

Lands actions involving sale or exchange could have a long-term impact on livestock grazing if these lands were eventually developed and fenced out of the allotment. Land sales are usually for smaller parcels and are withdrawn from grazing use more quickly with a resulting loss of animal units (AUs). A total of 18 allotments in Dona Ana County encompassing a maximum of 619 AUs could be affected. The owner of any permanent range improvements would be compensated for the adjusted value of their interest in these range improvements. Exchanges are usually between two agencies rather than individuals, but private exchanges for small parcels do occur. When large parcels of public land are exchanged, the land acquired usually has more significant resource values. Most of the exchanged or acquired lands would become part of a grazing allotment. On exchanged lands, livestock numbers would remain the same as long as an agreement was reached between the parties involved for control of the base property and livestock. On acquired lands, if a determination was made that these lands would be grazed, a carrying capacity would be calculated and these AUs added to the present capacity. All

of these actions could alter livestock use patterns. The percent Federal range, or the revenue paid the United States Government would change with each of these lands actions. The multiple-use management of 2,976,675 acres of land in Federal ownership would guarantee, with prescribed multiple use objectives, continued livestock grazing on the public land. The acquisition of State trust land and private land should block up the public land and aid in the managing of grazing activities.

ACECs, as managed at present would have little effect on livestock grazing. If parts of these ACECs were fenced from grazing, livestock use patterns would change but for the most part AUs would remain the same. Fenced areas are usually small. Additional measures would be taken to mitigate impacts to grazing such as providing water in other areas when riparian areas are fenced. Grazing activity plans would be developed to minimize the potential conflict between recreational activities and grazing use. The continued elimination of livestock grazing on parts or all of seven allotments would remain as at present.

Intensive vehicle use would continue on 4,160 acres. The two allotments which contain these intensive use areas, have the potential for more problems with vandalism and livestock harassment. These are B&W Cattle Co. (No. 03008) and Price (No. 15009). Having specified areas for intensive use, limits these problems in the rest of the Resource Area. Limiting vehicle use to existing roads and trails limits the amount of livestock and human interaction. Because most roads lead to developed improvements, vandalism remains about the same except during the hunting season. Most grazing permittees only use existing roads and trails. The closed designation would continue to keep vehicles out of the International Border area. Livestock grazing would continue as at the present time. Grazing permittees would monitor their livestock from horseback. Maintenance and repair of range improvements within these areas would be more costly and time consuming. Livestock grazing and the undesignated areas for vehicle use would continue to coexist uneasily in the Resource Area. The lack of designation allows vehicles to travel off-road anywhere within a large part of the Resource Area which results in increased vandalism of range improvements and livestock harassment.

Access routes could alter livestock patterns as they are developed. These new routes would allow livestock to move into areas not previously available for livestock use. New access also increases human presence which leads to the potential for vandalism and animal harassment.

Rights-of-way would continue to be granted and would cause an initial disruption in normal livestock patterns during the construction stage. With the completion of the lines or sites, normal patterns would resume.

Mineral activity would remain as at present causing some localized disruption in livestock grazing patterns over the short-term. Even though most of the Resource Area would be open to mineral leasing, little development is expected to occur (<125 acres/year). Mineral material sales would continue to cause problems in the allotments they are located. Livestock use in these areas usually ceases as the vegetation is eliminated. Oil, gas, and geothermal exploration and development and the access roads built in conjunction with these actions, would cause some short-term interruption in livestock grazing patterns. If an area became fully developed, the animals would adapt after a short period of time.

The two existing SRMAs would continue to be managed taking livestock and recreational needs into account. Grazing activity plans to minimize interaction between livestock and recreational users will be developed on the two allotments involved. High recreational use areas may be fenced out of these allotments.

The continued management of wildlife through six existing HMPs would benefit livestock by identifying conflicts and proposing appropriate measures to remedy these problem areas. Bighorn sheep and livestock interactions would continue to be a problem until all needed developments are constructed to separate the two. Coordinated activity plans would also aid in the resolution of this problem.

Watershed activities would improve ground cover and lessen soil loss. Forage would improve for a variety of uses including livestock. Livestock distribution would improve with a subsequent improvement of use patterns.

Sales of native plants would impact livestock to a small degree with the increased off-road vehicle use associated with plant removal. Yucca stalks, a favorite livestock supplement, would be a few less each year. Chemical land treatments of creosotebush and mesquite, could dramatically change and improve vegetation species composition, diversity, and frequency (for specific areas, see the SRG EIS, 1981 and Las Cruces/Lordsburg MFPA/EIS, 1984). Palatability of the native forage species, which would replace the brush species, would be greater. Areas available for grazing use would be increased, shifting potentially damaging grazing use from other areas. Most biological resources would benefit in the long-term from chemical land treatments. Livestock grazing would continue to be eliminated from 7,826 acres of public land. Most of these areas have been withdrawn from grazing because of significant riparian, recreational or wildlife values. Livestock AUs have remained the same in all but two allotments. On these two allotments, the Red Rock Game Farm and Post Office Canyon allotments, livestock were completely eliminated because of the conflicts with bighorn sheep and ongoing research.

Riparian and arroyo habitat attract livestock and many other users. These areas are usually small but are significant because of the diversity of life there. Because livestock are attracted to these areas they can cause more damage from trampling than grazing. The potential for improvement in these zones is greatest with a grazing rotation plan or removal of the livestock. Livestock should be used as a tool to clear old growth, change stand structure and open up densely vegetated areas naturally. Fencing, salting and providing additional water outside of these areas, e.g. the Gila Lower Box, has been necessary to implement a rotational grazing system.

Management of special status plants, (threatened, endangered, candidate, or sensitive species) and their habitat within the Organ Mountains Coordinated Resource Management Plan would continue to be protected and enhanced. All other special status plants would continue to be managed and protected on a case-by-case basis.

IN SUMMARY, land disposal, undesignated vehicle use areas, and the elimination of livestock

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grazing would have short- and long-term impacts on livestock grazing due to either permanent livestock removal or conflicts from human users. Chemical land treatments could limit conflict and provide additional forage for livestock grazing use in the long-term. There could be short-term impacts to grazing patterns.

VEGETATION

The disposal of land could have a major adverse impact on the vegetation resource in those areas. Lands under BLM jurisdiction are managed and protected and under the multiple- use mandate. Lands removed from this mandate are usually disposed of for development purposes. Development may include clearing, contouring and other surface disturbing activities. Most of these impacts would occur on the mesa east of Las Cruces. Acquired lands from the State and private sector would come under this multiple-use and protection mandate.

The ACECs usually have specific values for which they would be designated. These values are related to the scenic, biological, riparian or special status plants designations. All of these values are related to the vegetation resources. These special designations would enhance and protect the native vegetation species.

The 4,160 acres open to vehicle use in the Resource Area could sustain additional long-term loss of the native vegetation species. But on the other hand, having these areas available may limit the amount of off-road use in other areas. The continued designation of existing roads and trails, would keep vehicle use to specific areas so only the tracks in most of the roads would be void of vegetation. Closed areas would prevent vegetation disturbance from vehicles. Most of the Resource Area would remain undesignated. This allows vehicle traffic everywhere not otherwise designated. Vehicle trails, tracks, roads or ways, in a desert community, can cause a scar that will last for years. Soil erosion is also tied closely to vegetation loss.

Linear rights-of-way, especially transmission lines, would cause a short-term vegetation disturbance while the line was under construction. Upon completion, only the maintenance road would show a long-term vegetation loss. Pipelines require

extensive clearing along the route. These areas would be reseeded minimizing the long-term vegetation loss. In most cases, a road for maintenance purposes is needed. Site rights-of-way, usually communication sites are grouped together to minimize soil and vegetation loss. Because these sites are at higher elevations, little soil is present and vegetation reestablishment is slow.

Mineral activities would cause a small localized loss in native vegetation (<125 acres/year) during exploration and development phases. All areas would be reseeded and recontoured when these activities are completed. Successful reclamation is dependent upon climatic conditions. Mineral material sale areas cause the removal of vegetation on a larger scale. Top soil, if stockpiled, can be replaced during the recontouring and reseeding stage. Native plants are made available to the public whenever possible. Fluid minerals cause minimal vegetation disturbance during the exploration stage. Upon development, some additional acreage is disturbed. All of the disturbed acres are recontoured and reseeded. The continued closure of part of the Resource Area to locatable and leasable mineral entry would not change the existing vegetation resource.

HMPs would aid in vegetation management by establishing vegetation objectives and ways to achieve these objectives for wildlife and other uses. These plans would set and balance use levels on key species used by wildlife and livestock.

Watershed activities would benefit the vegetation resource by providing ways to stabilize the soils so native species would have a change to reestablish.

Sales of native plants would continue with minimal loss to the vegetation resource. Some off-road vehicle use is required in plant collection areas. This may cause damage to other species. Chemical treatment of brush dominated areas would have a significant short- term impact by removing most of the existing brush species (for specific areas see the SRG EIS, 1982 and Las Cruces/Lordsburg MFPA/EIS, 1984). Yucca species, cactus and other species that respond slowly to intake of groundwater, appear to die back but within 3 years recover. The loss of the brush would allow other species to establish once the water and nutrients are released. Brush control

areas are allowed at least two growing seasons rest after treatment. The long-term benefits, from a multiple-use standpoint are seen in increased ground cover, improved species composition and additional production yield. The elimination of grazing would protect forage plants from potential overuse by livestock but at the same time the benefits that could be derived from grazing would not be realized. Prescribed grazing removes old growth which can inhibit new plant growth, and can create a favorable habitat for seedling growth. Prescribed grazing can stimulate new plant growth.

Riparian and arroyo habitat, with proper management, can revegetate in a short period of time. These areas have received special emphasis in recent years due to their degraded state. Riparian areas within the Resource Area would receive range improvements needed to implement grazing activity plans. These areas can then be rested during critical periods. Riparian areas would improve within the next 5 years.

IN SUMMARY, Acquisition of lands, ACECs, chemical brush control, and the elimination of livestock grazing could in the long-term protect and enhance the vegetation resources through the BLM's mandate of increasing public awareness or due to the limited uses assigned to the land. The disposal of public land and undesignated vehicle use areas would have short- and long-term negative impacts through the loss of the vegetation resource through land development and off-road vehicle travel. Chemical brush treatments would cause a short-term loss of the targeted brush species.

SOIL/AIR/WATER

Soil

Lands identified for disposal would be subject to soil surface disturbance from activities such as clearing, levelling, and construction that would be subject to regulation by State and local governments. Any soil loss from accelerated erosion would be irretrievable.

Improved manageability through acquisition and consolidation of acquired lands would protect the soil resource because activities on these lands

would be managed under BLM policy and regulations.

The soil resource within the four existing ACECs have received additional protection because soil surface disturbance has been reduced by limiting vehicle uses, exclusion of rights-of-way and permanent structures, mineral withdrawals, and exclusion or management of livestock on these areas.

Off-road vehicle closures would protect the soil resource from disturbance and vegetation loss. Limiting off-road vehicle use to existing roads and trails would protect the soil resource because surface disturbance would not extend beyond the designated and existing roads and trails. Areas open to off-road vehicle use could result in continued soil surface disturbance, compaction and vegetation loss. This would subject the soil resource to wind and water erosion. Undesignated areas could allow the degradation of the soil resource because off-road vehicle use would not be controlled and surface disturbance, compaction, and vegetation loss could occur over an extensive area. These disturbed areas would be subject to wind and water erosion. Any soil loss from accelerated erosion would be irretrievable.

Developing new vehicle access into inaccessible areas could involve surface disturbing activities such as road construction. New road construction could increase the soil susceptibility to wind and water erosion at least during construction activities.

Existing rights-of-way corridors could be subject to surface and shallow subsurface soil disturbance from any new construction and maintenance activities, and increased activity within rights-of-way by vehicle use.

Exploration of oil, gas, and geothermal resources on lands which are open to leasing would affect the soil resource by disturbing soil surface near exploration sites and construction of access roads into exploration sites. Development of the fluid mineral resource would affect the soil surface by extensive soil surface disturbance from road construction, site levelling and clearing which would cause wind and soil erosion. Exploration and development of fluid minerals resources could

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cause disturbance on approximately 33 acres of land per year. Areas closed to fluid mineral leasing) would not be subjected to soil surface disturbance from exploration or development activities. Site-specific stipulations for fluid mineral leasing would limit surface disturbance on public land open to fluid minerals leasing (see Appendix A).

Exploration of locatable mineral resources would result in site-specific soil surface disturbance from drilling, trenching, and in some cases construction of access roads. Development of locatable mineral resources would result in site-specific soil surface disturbance on approximately 38 acres per yr from construction of access roads, levelling of sites, extensive trenching and digging, and deposition of tailings from the mine. On area withdrawn from locatable mineral entry, lands would not be subjected to soil surface disturbance from mining activity.

Extraction of salable mineral materials results in the removal of the soil surface, construction of access roads and levelling of the site for equipment and materials storage on approximately 83 acres per year. Areas which are closed to salable mineral activity would not have surface soil disturbance from associated activities.

There are two existing developed recreation areas, Dripping Springs Natural Area and Aguirre Spring Recreation Area, within the Resource Area. The remainder of the Resource Area is managed for dispersed recreation activity. In the two developed areas, activities (hiking, camping), which may impact the soil resource, by causing erosion and compaction are limited to designated trails and camp sites. These facilities are maintained and any erosion which occurs is minimal.

Continued implementation of the six existing HMPs will provide protection to the soil resource in these areas because activities which may occur in these areas are generally limited in scope and extent by existing management guidelines. Impacts to the soil surface from habitat development projects could occur on 1/2 acre per year.

Soil surface disturbance in the five existing vegetation sale areas located in Dona Ana County is limited to specific sites where digging of individual plants occurs. Impacts to surface soil

would occur on specific sites disturbing approximately .05 acres per year.

Vegetation treatments consisting of chemical brush control and prescribed fires would occur in the Resource Area. Short-term exposure of the soil surface to wind erosion by chemical brush control will occur until the ground cover is re-established. Exposure of soil surface by prescribed fire to wind and water erosion is short-term as revegetation usually occurs within one to three growing seasons. Hot spots in fires can alter physical soil surface properties by reducing organic matter, decreasing nitrogen content, and causing a reduction in soil microbes (Wright and Bailey 1982). These alterations are not permanent and recovery occurs with revegetation of the area.

Areas excluded from grazing would not be impacted by trampling and trailing associated with grazing. Erosion may be reduced through increased ground cover, cattle trails to and from water will be decreased, and barren areas near water sources would not exist.

IN SUMMARY, under Alternative A, the soil resource would be affected by soil disturbance from mineral resource activities, and off-road vehicle use on undesignated lands. Benefits to the soil resource would result from vegetation treatments and the continued implementation of six HMPs.

Air

Lands identified for disposal would not be managed by the BLM. Restrictions on activities would be the responsibility of State and local governments. Disposal of lands may affect air quality because activities which may occur on these lands, such as clearing, construction, and sand and gravel operations would increase dust levels in and near the areas of activity during construction phases. Acquisition and consolidation of lands would maintain or improve air quality through improved manageability because activities on these lands would be limited in scope and extent.

Continued management of four existing ACECs would help maintain air quality over these areas, as activities which may occur within these ACECs are limited in scope and extent.

When vehicle use occurs in open areas, there may be a short-term (several hours) reduction in air quality from dust. Long-term impacts to air quality from dust could occur on areas where the vegetation has been removed and the soil is exposed to wind erosion. There may be a short-term reduction in air quality from dust when a vehicle is used off-road within undesignated areas.

Development of additional access would result in localized short-term air quality reduction from dust during construction of the access and continuing use of access by vehicles on gravel or dirt roads.

Within areas open for fluid minerals leasing, exploration and development of fluid minerals resources would temporarily affect air quality from dust by the construction and use of access roads, site levelling, and utility construction.

Within areas open to locatable mineral entry, air quality reduction from dust would temporarily occur from activities such as trenching, construction of access roads, site clearing and levelling.

Air quality reduction, in localized areas, from dust would occur from activities such as construction and use of access roads, site clearing and levelling, and removal of mineral materials.

Vegetation treatments (as proposed in the SRG MFP (BLM 1982) and Las Cruces/Lordsburg MFPA (BLM 1984)) such as prescribed fires and chemical brush control have short-term effects on air quality. Smoke from prescribed fires temporarily reduces air quality over the area that is being burned. Smoke quickly dissipates as wind disperses the smoke. Areas that have been chemically treated may reduce air quality from dust that is carried by winds before the area revegetates.

IN SUMMARY, under this alternative air quality would not be affected by most planned actions. Site-specific, short-term reduction in air quality would occur with off-road vehicle use, some mineral activities and vegetation treatments. Long-term reduction could occur from fluid mineral development activities.

Water

Disposal of lands could impact the water resource by the introduction of pollutants into the groundwater from activities which may occur on this land.

Watershed planning could improve water resources. Planning activities such as grazing management, erosion control, and vegetation treatments could increase percolation of water into the water table.

Vegetation treatments (as proposed in the SRG MFP (BLM 1982) and Las Cruces/Lordsburg MFPA (BLM 1984)) such as chemical brush control and prescribed fire could improve and protect the water resource by increasing vegetation ground cover, reducing erosion, and increasing percolation of water into the water table (Wright and Bailey 1982).

Exclusion of grazing could improve and enhance water resources in these areas by maintaining or increasing vegetation which reduces erosion and increases percolation.

IN SUMMARY, under Alternative A, there would not be any significant impacts to the water resource. Activities such as watershed planning and vegetation treatments would enhance water resources where these activities occur.

WILDLIFE

Disposal of lands near urban areas would reduce populations of small mammals, birds, and reptiles by eliminating habitat because of construction and development that would occur following disposal. Disposal of lands away from urban areas could affect wildlife because these lands could be buffer zones for sensitive habitats which may occur near these lands. Improved manageability through acquisition and consolidation of lands would benefit wildlife because these lands may include sensitive habitat or provide a buffer zone around sensitive habitats.

The management of the four existing ACECs would benefit wildlife and wildlife habitat because

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activities within these ACECs would be limited in their scope and extent.

Off-road vehicle closure on public land would enhance wildlife because habitat disturbances from activities associated with off-road vehicle use would not occur. Limited off-road vehicle use could benefit wildlife because activity would be limited to existing roads and trails. Limited off-road vehicle use could affect wildlife near these areas from disturbances caused by noise, harassment, and habitat degradation.

Areas open to off-road vehicle use would continue to degrade wildlife habitat in these areas (Bury, et al. 1977). Off-road vehicle use on undesignated lands would degrade wildlife habitat over an extensive area.

Exploration of oil, gas, and geothermal resources would affect approximately 3 acres of land per year. Development of these resources would affect wildlife and wildlife habitat by habitat degradation caused by development of access, well fields, pipelines, and other necessary facilities. Areas closed to exploration and development of oil, gas, and geothermal resources would not affect wildlife or wildlife habitat. Site-specific stipulations for fluid mineral leasing would limit disturbance to wildlife and habitat degradation.

Exploration of locatable mineral resources could result in site-specific habitat degradation and temporary displacement of wildlife from the area. Development of locatable mineral resources would result in long-term habitat degradation from construction of access roads, levelling of sites, trenching and digging, and deposition of tailings from the mine. Exploration and development of these resources could affect wildlife on approximately 38 acres per year. Mineral activity on 5 acres or more requires a plan of operations which would include an Environmental Assessment to mitigate the effects of mining activity. On areas currently withdrawn from locatable mineral entry, wildlife and wildlife habitat would not be affected by locatable mineral exploration or development in these areas.

Extraction of salable mineral materials on approximately 83 acres per year would degrade wildlife habitat on this land.

Continued implementation of the six existing HMPs would provide protection to the wildlife and habitat in these areas because activities which may occur in these areas are generally limited in scope and extent by existing management guidelines. Habitat improvement projects could cause short-term disturbances (1 to 3 days) to wildlife.

Development of watershed plans would benefit wildlife by protecting and enhancing habitat components (soil, vegetation) through management activities such as erosion control, grazing management, and recreation management.

Vegetation sales could affect small mammals, birds, and reptiles on the five existing sale areas in Dona Ana County. The disturbances from digging and off-road vehicle use would occur on .05 acres per year and would slightly degrade habitat and temporarily displace wildlife from this area.

Vegetation treatments such as chemical brush control and prescribed fire would affect wildlife and wildlife habitat. Short-term impacts (1 to 3 years) to the habitat from vegetation loss and temporary (several hours to days) wildlife displacement would occur after a vegetation treatment (Wright and Bailey 1982). Long-term impacts resulting from increased vegetation diversity, healthier vegetation communities, and erosion reduction would impact wildlife and their habitats.

Elimination of grazing could impact wildlife where habitat degradation and competition for forage and cover between livestock and wildlife occurs. Localized increases in wildlife populations may result (Sandoval 1982; BLM 1986; Ames 1977).

IN SUMMARY, under Alternative A, activities associated with mineral exploration and development would result in site-specific

disturbance to wildlife and wildlife habitat. Activities associated with open and unregulated off-road vehicle use would disturb wildlife over a greater area.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Acquisition or disposal of land can cause varied impacts to cultural resources. For example, acquisition of a significant Apachean site or Paleoindian camp or kill site would enhance the diversity of sites within the Mimbres Resource Area since few sites of this type are currently documented.

Impacts to cultural resources eligible for the National Register of Historic Places located within lands identified for disposal are mitigated through excavation and other methods. These mitigative efforts result in determinations of "no adverse effect through data recovery." However, these data recovery methods treat only portions of sites and some data is lost. In addition, modern excavation techniques will be considered primitive by future researchers.

Under this alternative, cultural ACECs and the Butterfield Trail Special Management Area would not be designated and would not receive additional protection.

The effects of vegetation use through livestock grazing are generally low, except where conditions combine to concentrate cattle. Proximity to water, certain types of forage, natural barriers, or fences can result in channeling cattle to result in intensive trampling of artifacts and archaeological features, as well as increased site erosion. Eliminating livestock grazing by the construction of enclosures reduces these impacts.

Cultural resources near population centers have been impacted from off-road vehicle travel. Direct impacts to exposed features and artifact scatters have resulted from vehicle tire damage. Other areas have been impacted by unauthorized collection and vandalism due to off-road vehicle travel into back country areas. This activity is known to occur but the exact numbers of sites affected are not known at this time. Since a large

portion of the Resource Area would remain undesignated under this alternative, impacts from off-road vehicles would probably be much greater than in the other alternatives. All negative impacts on cultural resources would result in irreversible and irretrievable losses of information.

Since mining notices are non-discretionary actions, they have the potential to disturb cultural resources throughout the Mimbres Resource Area. Although each notice disturbs less than 5 acres, they have the potential to destroy historic mining features, prehistoric rock art sites, Mogollon village sites, and other types of cultural resources. Ground disturbance related to mining activity that can affect cultural resources includes but is not limited to, blasting, construction of new access roads, creation of staging areas, core drilling, and trenching with heavy machinery. Any degradation of cultural resources would result in irreversible and irretrievable losses of information.

Protection of riparian areas in many cases reduces erosion of archaeological sites. Riparian areas typically have high concentrations of historic and prehistoric sites which can be damaged by erosion.

IN SUMMARY, acquisition of lands can enhance the diversity of sites within the Mimbres Resource Area. Disposal of sites can reduce site diversity in the Resource Area. Mitigation of sites on lands identified for disposal can result in cultural data loss. Mining notices are non-discretionary actions and can result in disturbance to cultural resources. Off-road vehicle travel can result in direct impacts to unprotected cultural resources. Protection of riparian areas can reduce erosion to associated cultural resources.

RECREATION

Disposal of land adjacent to the City of Las Cruces would reduce opportunities for recreation on public land in the Mimbres Resource Area by 2.6 percent. Opportunities for quail and rabbit hunting, mountain biking, off-road vehicle use, and walking would be most affected, since those are the predominant uses of the disposal lands. Acquisition of lands in the Organ Mountains, the West Potrillo Mountains, the Uvas Mountains, Box Canyon, and along the Rio Grande would improve recreation opportunities in those areas by improving public land patterns and reducing

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conflicts associated with land ownership boundaries. Recreation on those lands would not differ significantly from that on existing adjacent public land, but legal public access to those areas for recreation would improve while the potential for conflicting development would greatly diminish, such as construction of houses in a popular hunting or shooting area. The natural character of acquired lands would be protected, enhancing most dispersed outdoor recreation opportunities in which quality is generally enhanced by a lack of human development and disturbance. Acquisition will also enable the BLM to provide facilities for developed recreation, such as trails, trailheads, and parking lots.

Existing ACEC and Special Management Area designations affect specific recreation opportunities. Most recreation activities are permitted and even enhanced by ACEC or Special Management Area designations and management prescriptions because of increased signing and restrictions on activities that could disturb the naturalness of the areas.

Dispersed recreation opportunities, such as hunting, camping, sightseeing, walking, and nature study where quality is enhanced by increased naturalness in the setting would benefit from existing vehicle closures or limitations, foot access development, wildlife habitat management, watershed management, vegetation treatments, and grazing restrictions. Recreation dependant on vehicle use such as mountain biking and motorcycle riding would be unaffected by those actions. Open vehicle designations or no vehicle designations would leave 2,620,460 acres (85 percent of the Resource Area) available for vehicle recreation as well as all other recreation uses. Vehicle access, right-of-way development, and mineral exploration and development would improve accessibility to most of the Resource Area for hunting, hiking, climbing, caving, picnicking, rockhounding, driving, and other activities.

Recreation use would be impacted from access development to and across public land as additional county, State, and Federal roads are built. These roads could improve opportunities for recreation but may detract from recreation quality by allowing unplanned access in certain

areas. Access development would also improve recreation opportunities as the BLM constructs roads or acquires easements across public and non-Federal lands.

Construction of primitive recreation facilities in the Dona Ana Mountains and in the Gila Lower Box would increase developed recreation opportunities on public land in the Resource Area by 100 percent. Continued facility development in the Organ Mountains as described in the Organ Mountains Coordinated Resource Management Plan will allow the BLM to meet the needs of increased visitation at developed sites in the Organ Mountains from approximately 100,000 to 200,000 visits per year that is expected to occur from increasing populations and the trend toward outdoor recreation activities closer to home. Opportunities for hiking on established trails in the Resource Area will increase 316 percent with development of new trails in the Organ Mountains.

Cultural Resource Management Plan development will enhance recreation opportunities in the Organ Mountains, at Fort Cummings, and along the Butterfield Trail primarily through access development and interpretation. Interpretation of material from the Paleozoic Trackways Site will enhance the quality of recreation at developed facilities from Las Cruces to the Smithsonian Institution.

Although opportunities for hunting are not likely to change much, the quality of hunting should improve in response to implementation of HMPs. These HMPs and associated herd management by the New Mexico Department of Game and Fish should also lead to the recovery of mule deer in the Organ Mountains and deer and desert bighorn sheep in the Peloncillo, Big Hatchet, and Alamo Hueco Mountains to levels that would sustain regular harvests.

Watershed management would impact hunting for small game and game birds as unstable watersheds become more stable and ground cover increases. Some access routes may need to be closed or rerouted to assist in watershed stabilization, but overall there would be no significant change in recreation access routes as a result of watershed management activities. Rockhounding quality may

decline in certain watersheds as stabilization and vegetation recovery limit the amount of exposed rock available to collectors.

Vegetation treatments would also lead to increased ground cover and decreased soil instability, leading to increased quality of small game and game bird hunting.

Riparian and arroyo habitat management has the greatest potential to improve hunting quality for big game, small game, and game birds of any management practice in the Resource Area. Under this alternative, such improvements would be limited to the San Simon Cienega, Gila Lower Box, Organ Mountains, and Placitas Arroyo Riparian Demonstration Project.

IN SUMMARY, recreation activities that are dependant on or enhanced by a natural setting would-occur on approximately 15 percent of the Resource Area without being affected by surface disturbing activities such as vehicle use off of existing roads, mineral exploration and development, and right-of-way development. The remaining 85 percent of the Resource Area would support numerous forms of dispersed recreation along with vehicle use, mineral actions, and right-of-way development, and these activities would enhance opportunities for vehicle recreation and for access to engage in other forms of recreation. Recreation facility development would increase opportunities for developed picnicking and camping by approximately 100 percent in the Resource Area while opportunities for trail hiking and riding would increase by approximately 316 percent. Wildlife habitat actions including riparian and arroyo management as well as watershed stabilization and vegetation treatments would improve hunting quality but detract from rockhounding quality. Cultural and paleontological resource management will expand opportunities for and quality of associated recreation opportunities through both on-site and off-site interpretation.

VISUAL RESOURCES

Visual resources of 77,145 acres of public land in Dona Ana County would be degraded as those lands are disposed of and developed. Approximately 25,499 acres of these lands are Class III and 50,425 acres are Class IV where

visual resource changes could occur under BLM management, but it is unlikely that they would ever be developed under BLM management to the extent that they would as the City of Las Cruces expands onto them in private ownership. The City would become the dominant feature of the landscape over most of the disposed lands at approximately 8 percent per year. Acquisition of up to 32,700 acres of land by the BLM in Class II areas would enhance management of visual resources on up to 327,000 acres of adjacent public land.

The only existing ACEC designation that affects VRM class is the Organ Mountains Scenic ACEC designation, which makes the Organ Mountains Scenic ACEC a Class I area. This designation limits management activities so that the natural ecological processes dominate the landscape. ACEC designations in the Gila Lower Box, Gila Middle Box, and Central Peloncillo RNA indirectly benefit visual resources by necessitating Plans of Operation instead of Notices of Intent for mining operations on 7,460 acres in the Resource Area.

Vehicle closures would protect visual resources on 12,590 acres along the Mexican border, but most of this area is Class IV, with Class II areas in the Carizalillo Hills, near the Alamo Hueco Mountains, and in Guadalupe Canyon. Vehicle limitations would more significantly protect visual resources in the 382,909 acres of wilderness study Areas plus the remaining 65,360 acres of hilly and mountainous terrain including the Organ, Franklin, and Dona Ana Mountains, the Aden Lava Flow RNA, and the Kilbourne Hole National Natural Landmark where vehicle use is limited to designated roads and trails. Open vehicle designations and undesignated areas could allow degradation of visual resources including 4,160 acres of open areas and approximately 250,000 undesignated acres, some of which are VRM Class II lands along the Rio Grande and Virden Valleys and portions of the Peloncillo, Animas, Pyramid, Hatchet, Cedar, Cooke's, and Uvas mountain ranges.

Development of vehicular access, rights-of-way, and vegetation sale areas plus exploration and development of mineral resources would cause degradation of visual resources, but most of this degradation would occur within VRM Class III

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and IV areas where it would conform to VRM guidelines.

Closures of areas to locatable minerals and coverage by special fluid mineral leasing stipulations would prevent degradation of visual resources by those activities within the covered areas, primarily in the Organ Mountain and the wilderness study areas where VRM Class II prevails.

IN SUMMARY, activities that can alter or dominate the shape, form, color, or texture of the landscape would generally be allowed to occur over approximately 2,221,000 acres of the Resource Area which are currently classified as VRM class III or IV. Activities on the remaining Resource Area lands would be restricted to conform to VRM Class II guidelines where changes in the basic visual elements should not be evident, or VRM Class I in the 8,840 acre Organ Mountains Scenic ACEC, where no management action can create a contrast in the landscape. Most activities are currently subject to some forms of restrictions that would keep those actions within established VRM guidelines.

WILDERNESS

Acquisition of inholdings within WSAs and wilderness areas would improve manageability of those lands in a manner that would enhance the wilderness characteristics of both the acquired lands and adjacent WSA or wilderness area lands. Under this alternative, State trust land in the West Potrillo Mountains, Aden Lava Flow, Robledo Mountains, and Uvas Mountains WSAs would be acquired as the opportunity occurs to enhance wilderness management of those areas.

Development of foot access routes in the Organ Mountains would enhance the ability of recreationists to enjoy diverse forms of recreation in wilderness settings, enhancing opportunities for solitude.

Implementation of existing wildlife habitat and watershed management plans would enhance the natural characters of WSAs or wilderness areas.

Vegetation treatments would only be allowed within WSAs or wilderness areas to the extent they conform to the Interim Management Policy

or wilderness management policy, including prescribed fire when it can be proven to be a natural component of the ecosystem. Livestock grazing manipulation would be allowed as a vegetation treatment provided that it leads to improvement in the natural condition of the area as a whole, and it does not contribute to a decline in the ecological condition of rangeland within the wilderness area.

IN SUMMARY, activities within WSAs and wilderness areas would be constrained by the Interim Management Policy and Wilderness Management Policy, respectively so as to protect existing values of naturalness and opportunities for primitive and unconfined types of recreation. Acquisition of State inholdings, development of foot access routes, wildlife habitat management, watershed management, and vegetation manipulations may be allowed in a WSA or wilderness area to enhance wilderness management and values.

SPECIAL STATUS SPECIES

Plants

Lands identified for disposal, especially in the sand dunes along the Rio Grande between Las Cruces and the Texas border, are prime habitat for the sand prickly pear cactus. A mitigation plan has been developed for this species. A pad or stem from plants identified in disposal areas is transplanted to the new site to maintain the genetic pool. The exclusive night-blooming cereus, which grows in creosotebush, could also be found on these lands. The plant is extremely difficult to locate as it blends in well with the surrounding brush. The multiple-use management of 2,976,675 acres of public and the acquisition of State trust and private lands could potentially protect and enhance special status species and habitat for these species.

ACECs, especially in the Organ Mountains, would provide additional protection and management for all vegetation species but in particular for the identified or potential 24 State of Federally-listed species identified in the area. The Sneed's pincushion cactus, a Federally-listed species is found on the south end of the mountain range. Other species include the Organ Mountain

primrose, Organ Mountain coryphantha, desert rose, rock daisy, and smooth figwort.

The existing roads and trails designation would limit potential plant theft which is a real problem with special status plants. It would also limit potential habitat damage from off-road vehicle use. Closed areas if special status plants species are present, would provide long-term protection of the habitat and species. Most of the Resource Area, 2,582,440 acres would remain undesignated. This would allow special status plants habitat destruction and could result in a significant loss of special status plants species.

Rights-of-way could cause some potential habitat loss. The reclamation procedures would lessen the long-term impact.

Mineral actions also require a site-specific clearance. There are areas that are open to locatable mineral entry which under notice could cause some habitat loss. Most habitat loss occurs in the short-term. Long-term loss would be mitigated by the reclamation procedures. Mineral material sale areas could have the potential for longer term habitat damage. Areas closed to locatable and leasable mineral entry would remain as at present.

Developed recreation sites provide special protection measures for special status plants in the area. These areas usually provide for increased interpretative and educational awareness of the biological resources around them. Visitors are limited to specific areas which protect existing plants and their habitat. Dripping Springs Natural Area and Aguirre Spring Recreation Area are good examples. Increased awareness and public use usually deters theft as plant thieves tend to work in areas that are not frequented by others. Hunting, by itself does not cause a problem to special status plants unless the associated off-road vehicle use and camping takes place on a special status plants or in critical habitat.

Watershed activities, by stabilizing the soils, and providing for improved vegetation cover should enhance habitat for all vegetation types and special status plants.

Vegetation sale areas have had a site-specific clearance done. Chemical land treatments could cause significant habitat loss for the species that depend on these brush dominated areas (for specific areas see the SRG EIS, 1981 and Las Cruces/Lordsburg MFPA/EIS, 1984). Night-blooming cereus uses creosotebush for support as it grows upward. It also blends in so well with its environment it is hard to recognize. The chemical acts as a fertilizer on most cactus species. Cereus would be affected more by the increased visibility, which could lead to theft, than losing the support of the shrubs. Most special status plants would benefit from the release of water and nutrients in a brush control area. The elimination of livestock grazing on 7,826 acres would benefit special status plants and their habitat in the long-term by eliminating the possibility of trampling and grazing by livestock.

Special status plants have a tendency to occur around permanent and semi-permanent water. Riparian and arroyo habitat management would enhance and protect a large number of these species.

IN SUMMARY, land acquisition, ACECs, chemical brush control for most species and the elimination of livestock grazing could have positive long-term impacts by intensifying management, keeping land in Federal ownership and closing areas to users which could cause loss of habitat. Long-term impacts could occur to special status plants habitats from land disposal actions and undesignated vehicle use. Chemical brush control could cause some habitat loss in the short-term. Night-blooming cereus would be affected by chemical brush control in the long-term as it become more visible and uses creosotebush to support its growth.

Animals

Acquisition and consolidation of lands would provide improved manageability of habitat for special status animals as well as provide a buffer around sensitive special status habitat.

The management of the four existing ACECs would benefit special status species because

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activities within these ACECs can be limited in scope and extent.

Off-road vehicle closures located on public land primarily along the Mexican border could benefit threatened and endangered animals by reducing habitat degradation and animal disturbance within these areas. Of particular importance is the Guadalupe Canyon in southwest Hidalgo County where numerous special status bird species occur seasonally. Limited off-road vehicle use on existing roads and trails would prevent disturbance to these animals and habitat degradation on areas without existing roads and trails. Use of existing roads and trails in areas with special status species could allow disturbance to special status species and habitat degradation when off-road vehicle activities occur. Off-road vehicle use on undesignated lands would cause habitat degradation.

There are 370,000 acres of land which contain habitat for desert bighorn sheep that are open to fluid mineral leasing with special stipulations. Special stipulations such as no surface occupancy and seasonal use restrictions are used to mitigate impacts to special status species.

Exploration and development of locatable minerals on areas less than 5 acres could result in site-specific special status species habitat degradation from access construction, site levelling, mining, and deposition of tailings (BLM 1986; Sandoval 1982). Activities on 5 acres or more require a plan of operation which would be analyzed in an Environmental Assessment to mitigate the effects of mining activity. Within areas closed to locatable mineral entry (Classification and Multiple Use lands), special status species such as desert bighorn sheep, Gila monsters, and Colorado mountain chipmunk (Organ Mountain race) and their habitats would not be affected by locatable mineral activity.

There are two existing developed recreation areas, Dripping Springs Natural Area and Aguirre Spring Recreation Area, within the Resource Area. The remainder of the Resource Area is managed for dispersed recreation activity. Activities (hiking, camping) in the existing areas which may disturb special status animals or their habitat, are limited to designated and maintained trails and camp sites which minimizes impacts to special status species.

The remainder of the Resource Area is subject to unrestricted hiking and camping, and special status animal habitat disturbance could occur in sensitive areas such as desert bighorn sheep habitat in the Peloncillo Mountains and Big Hatchet Mountains.

Continued implementation of the six existing HMPs would provide protection to special status animals and their habitat which occur in these areas. Activities which may occur in these areas are generally limited in their scope and extent by existing management guidelines.

Watershed planning would enhance special status animals habitat because activities associated with grazing, mineral development, and recreation would be managed to reduce erosion, maintain or enhance vegetation cover and diversity, and protect soil resources.

Exclusion of grazing would prevent disturbance to special status animals because competition for forage and cover with livestock and disturbances resulting from activities such as fence and water construction and maintenance would not occur (Sandoval 1982; BLM 1986).

IN SUMMARY, special status animals would benefit from acquisition of lands, management of four existing ACECs, off-road vehicle closures, limited off-road vehicle use, special stipulations for mineral activities on areas exceeding 5 acres, continued management of six existing HMPs, and watershed planning. Disturbances to special status animals could result from dispersed recreational activities, undesignated off-road vehicle use, and mineral activities on areas less than 5 acres.

RIPARIAN AND ARROYO HABITATS

Improved manageability of acquired lands which contain riparian and arroyo habitats areas would benefit these areas because they would be managed to protect and enhance their riparian and arroyo habitat values. Activities associated with grazing, mining, and recreation would be managed to provide the least amount of disturbance to the areas.

Continued management of the four existing ACECs would protect and enhance riparian and

arroyo habitat resources within these areas because activities which may occur would be limited in scope and extent.

Limiting off-road vehicle use to designated roads and trails would affect riparian areas and arroyo habitats where roads and trails occur. Riparian and arroyo habitat areas without existing roads and trails would not be subjected to degradation. Continued use of designated off-road vehicle open areas would affect arroyo habitats in these areas because use of these habitats would continue and they would not be allowed to recover from past use. Arroyo habitat areas within undesignated areas would be degraded by continued unregulated off-road vehicle use.

Within areas open to fluid mineral leasing, there are numerous seeps, springs, and arroyo habitat areas. Activities associated with the exploration and development of fluid mineral leasing such as access construction, site levelling, drilling, water pollution potential, and utility construction could affect riparian and arroyo habitats. Currently approximately 3 acres per year are affected by fluid mineral leasing activities. Areas closed to fluid mineral leasing which contain riparian areas and arroyo habitats would not be affected by activities associated with fluid minerals leasing. Site-specific stipulations for fluid mineral leasing would limit disturbance to riparian and arroyo habitat areas.

Potential impacts to riparian and arroyo habitats within areas open to locatable minerals would result from exploration and development activities such as construction of access roads, site clearing, and digging. Pollution from tailings, could cause vegetation loss, soil disturbance, and potential pollution of surface and subsurface water resources. Approximately 38 acres per year are affected by locatable mineral activity. Mineral activities on 5 acres or more require a plan of operations which are analyzed in the Environmental Assessment process to mitigate impacts from mining activities. Within areas closed to locatable mineral entry, activities associated with the exploration and development of locatable minerals would not occur and there would not be any impacts to riparian and arroyo habitats.

Most applications for mineral material sales and free use must go through the NEPA process to

mitigate effects on the environment. Mineral sales which occur in arroyo habitat areas would affect these areas because activities such as construction of access, material removal, and mineral storage would remove vegetation, disturb stream bank and arroyo stabilization, and alter flow of water down the arroyo.

There are two existing developed recreation areas, Dripping Springs Natural Area and Aguirre Spring Recreation Area, within the Resource Area, the remainder of the Resource Area is managed for dispersed recreation activity. In the two developed areas, activities (hiking, camping) which may impact riparian and arroyo habitat areas, are limited to designated trails and camp sites. These facilities are maintained and any disturbance which occurs is minimal. The remainder of the Resource Area is subject to unrestricted hiking and camping and riparian and arroyo habitat degradation, such as erosion and vegetation loss could occur where unmaintained trails and camp sites are found. Since most of these activities are widely dispersed, impacts are most likely to occur where use is concentrated. However, these activities tend to be of short duration (several days a year).

The continued implementation of the six existing HMPs would provide protection to the riparian and arroyo habitat resource in these areas because activities which may occur are limited in scope and extent.

Watershed planning would prevent vegetation loss, stream bank and arroyo side disturbance would be minimized, and erosion would be reduced. Activities such as grazing management, erosion control projects, mineral exploration and development, and recreation would be managed to mitigate disturbance to the resource.

Vegetation treatments in riparian-and arroyo habitat areas, if needed, would be limited to prescribed fire. Prescribed fire, while removing vegetation, would enhance vegetation diversity and increase basal cover after a short amount of time, (1 to 2 years).

Riparian and arroyo habitat in areas excluded from grazing would not be impacted by trampling and trailing associated with grazing. Erosion, stream bank and arroyo channel disturbance could be reduced through increased ground cover.

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Intensive grazing use causing vegetation depletion in riparian and arroyo habitat areas would not occur.

IN SUMMARY, the riparian and arroyo habitats would be affected by mineral resource exploration and development activities and off-road vehicle use on open and undesignated lands. These activities would degrade riparian and arroyo habitat areas by removing vegetation and disturbing arroyo channels.

SOCIAL AND ECONOMIC CONDITIONS

The net result of land ownership adjustments would be a decrease of 44,445 acres of land under BLM management in the Mimbres Resource Area. The social and economic impacts of these transactions would be to change the local tax base, to provide land for development, to improve the efficiency of BLM management, and to protect significant wildlife and scenic resources.

The effect of land disposal and acquisition on the local tax base are determined by the value of the land, the property tax rate, and the rate of PILT (payments-lieu-of-taxes) which the Federal Government contributes to local entities. The current PILT rate is \$0.75 per acre of Federal land. The current formula for property tax in Dona Ana County is $VALUE/3 * 0.0168771$ (Dona Ana County Assessor's Office 1991). At these rates, Federal land that is valued at less than \$135 per acre contributes more revenue to the county government than it would in private ownership; Federal land that is valued above \$135 an acre would make a positive contribution to the local tax base when converted to private ownership. The lands identified for disposal consist of 65,931 acres adjacent to Las Cruces on the East Mesa (approximate value \$2,500 per acre) (James 1991), 3,936 acres adjacent to Las Cruces on the West Mesa (average value \$2,500), and 7,188 acres of isolated parcels in the Mimbres Resource Area (average value \$65 per acre). The net taxable value of property in the Mimbres Resource Area was \$967,432,741 in FY 1987-88 (New Mexico Taxation and Revenue Department 1991). The taxable value of property in the Mimbres Resource Area would be increased by \$166,278,720 or 7 percent. Almost all of the increase in taxable value

would occur in Dona Ana County where the increase would be 23 percent. The net increase in tax receipts which would result from these land disposals is \$927,458. Dona Ana County would experience an increase of \$928,782 while the remainder of the Resource Area would experience a loss of \$1,342 in tax receipts.

These land exchanges would result in a loss of 447 animal units (AUs) in the Resource Area. A loss of \$10,031 in grazing fees and \$126,948 of gross return from livestock grazing would result. This would be a reduction of .5 percent in the livestock production for the Resource Area, and a reduction of 1.4 percent in the livestock production from public land in the Mimbres Resource Area. The following range improvements would be transferred to private ownership: 75 miles of fence, 2 wells, 1 spring, 2.25 miles of pipeline, 16 dirt tanks, 1 corral, and 1 erosion control structure.

The effect of these land exchanges in the Las Cruces area would be to provide non-agricultural land which is suitable for development. Introducing this land into the real estate market may result in a temporary decline in the value of undeveloped land and a greater difference in the value of non-irrigated and irrigated lands, which are currently over-valued. In 1987, the value for small tracts of irrigated land averaged \$17,434 per acre, compared to \$10,618 per acre for similar tracts of non-irrigated land (Pritchard 1988). The availability of large amounts of non-irrigated land should widen this differential, and help to shift development from irrigated agricultural lands to non-irrigated lands. The preservation of irrigated agricultural lands in the "Rio Grande Corridor" is one of the goals which has been adopted by the Rio Grande Council of Governments.

The population growth of Dona Ana County was 34 percent from 1980-1990. This rate of growth is expected to continue. Therefore, land for urban and suburban use will continue to be in high demand. Some conflicts could arise over plans for residential and commercial development on the East Mesa. Advocates of "open space" would prefer to see much of the area left in its present state, or preserved as parks to buffer residential areas. There would be great economic pressure to develop land immediately to the east of the City limits in high-value residential or commercial

developments. Land which would fall outside of the Extra-territorial Zoning (ETZ) area would be attractive to semi-rural development. Local governments would be required to make land-use planning decisions and to mediate in disputes over conflicting views regarding the use of these newly available lands.

Management of the designated SMAs and ACECs would continue. These lands provide a significant contribution to the public's appreciation and awareness of the natural landscapes and ecology of the Mimbres Resource Area. There could be conflicting opinions concerning the amount of land protected under the SMA, ACEC, and ONA designations under this alternative. Conservationists would prefer to see more land included in the designations while persons with an economic interest in extractive resource uses might prefer to see a smaller amount of land in protective designations.

Under Alternative A, vehicle management policies would follow existing designations for vehicle use. Modifications in designation could be made on a case-by-case basis, where needed. The effects of this policy on social and economic conditions are difficult to assess and can only be discussed in general terms. The public is benefitted by vehicular access to public land to the extent that resource damage from vehicular use is prevented. When resource damage occurs, the social and economic costs are born by the general population, while the benefits of vehicle use are limited to a smaller population of recreationists or land users. There are conflicts between user groups who enjoy primitive, dispersed recreation and those who prefer ORV-based recreation. Individuals who are engaged in mining or other economic activities may regard vehicle use restrictions as an obstacle to economic progress. Therefore, when decisions are made to limit vehicular use on public land, these factors must be weighed carefully.

The BLM easement acquisition program under Alternative A would be to follow guidance which has been established under previously existing land-use plans. The social and economic effects of gaining easements to large areas of publicly-owned land can be quite significant in terms of increased recreation and economic activity. Other impacts would include the effects of increased

visitation on existing uses. Many persons regard access to public land as a right that is being denied by a small group of private landowners. The private landowners defend their right to prevent trespass across their land. Other issues include vandalism and responsibilities for road maintenance. These issues can only be evaluated on a case-by-case basis which considers the economic and social benefits, the costs of obtaining the easements, and the administrative costs which would be incurred as a result of the easement.

The current right-of-way corridors would continue to be recognized in Alternative A. No new corridors would be established, and no right-of-way exclusion or avoidance areas would be designated. The social and economic value of public land as rights-of-way is considerable, but difficult to enumerate. The use of existing right-of-way corridors would reduce construction costs, and limit potential resource use conflicts. Rights-of-way applications would have to be evaluated on a case-by-case basis as they are proposed.

There would be 3,358,000 acres open to leasing for gas, oil, and geothermal leasing under Alternative A. There is an anticipated demand of two geophysical exploration permits per year, and a test well every 3 years. It is assumed that there would be one producing gas or oil well in the next 15 years. There is a predicted demand of 10 geophysical permits for hydrothermal development, 4 test wells, and 3 producing geothermal wells in the next 15 years.

The economic effect of these activities is difficult to predict because there are many unknown factors which could have great influence on the intensity of exploration and the economic value of the resource. However, there is not a great probability of discovering commercially significant oil and gas wells in the Resource Area. To date, 80 test wells have been drilled; producing 7 "shows", none of which have been put into production. Other factors influencing the economics of exploration and leasing include international events, government policies, and the state of the economy. There would be 409,700 acres closed to fluid and geothermal leasing under Alternative A. This would not be expected to have adverse economic effects because of the low

ALTERNATIVE A

potential for oil and gas production in the Resource Area. Geothermal development is confined to areas close to the potential use, therefore closures would be expected to have little effect on geothermal development.

The economic contribution of locatable mineral activity would not be expected to be great unless economic conditions change considerably. In the next 15 years, it is anticipated that four sites would be developed for production of locatable minerals. The economic potential of these sites would be entirely dependent on external market factors.

The demand for mineral materials is dependent on the construction industry. If current population growth projections are correct, the demand for housing and road construction will continue to increase. Existing sources of sand and gravel are expected to be adequate for the near term, however, it is anticipated that new sources of sand and gravel would be required in the next 15 years. This is complicated by the fact that much of the projected urban development in the Las Cruces area is expected to take place in areas with high potential for mineral materials. The opportunities for using public land for production of mineral materials would be reduced because of the disposal of lands in the Las Cruces area. Therefore, future development of mineral materials would be likely to take place on private or State trust lands, or in more remote locations on public land. The transportation cost is approximately \$0.20 per yard/mile for sand and gravel. These costs would not be significant for some users, such as the residential construction industry, but they may adversely affect others, such as road and highway construction and maintenance. Minerals policies have generated a good deal of conflict.

There are many who believe that the provisions of the 1872 Mining Claims Law are too lenient, and allow holders of claims to acquire public land too easily. Therefore, many would conclude that there is too much public land open to unrestricted mineral entry. There has also been concern over the lack of reclamation on abandoned mining claims. Other conflicts concern the location of mining claims in WSAs and ACECs, and road construction used to access mining claims.

Alternative A would emphasize recreational management of the existing facilities in the Organ Mountains Coordinated Resource Management Plan Area. Additional limited (primitive) facility development would be completed in the Dona Ana Mountains and in the Gila Lower Box. The BLM has developed a fee system for recreation in the Organ Mountains Resource Management Plan Area, which would generate approximately \$75,000 in fees annually from the estimated 100,000 to 110,000 visitor use days in the Aguirre Spring Recreation Area and Dripping Springs Natural Area (BLM Recreation Staff 1990). The total economic contribution to the local economy from these areas is estimated to be approximately \$531,000 annually (BLM 1991). The total economic contribution of hunting in the Mimbres Resource Area is \$14 million annually, and the contribution of public land to this amount is estimated to be \$5.6 million. The local economic contribution of these expenditures is estimated to be \$4,620,000 for hunting in the four-county area, and \$1,848,000 for hunting on public land. There are many non-consumptive users of wildlife who photograph wildlife, watch wildlife, or are just pleased to know that the wildlife are "there". The economic contributions of these non-consumptive users are difficult to assess. The remainder of the recreation activity in the Resource Area is dispersed recreation. The value of these activities such as sightseeing and picnicking, are more difficult to assess, but could be obtained if reliable estimates of the number of visitor days could be generated. According to the Comprehensive Plan for Outdoor Recreation in New Mexico, the greatest recreational needs are for multipurpose trails and day-use recreational areas within 1 hour's travel time of urban areas. The increasing population of the Rio Grande Corridor will accentuate this need in the Resource Area. Other factors contributing to this need are the trend toward shorter vacations, the increase in two income families, and the decrease of disposable income in the 1980s.

Site management of cultural and paleontological resources would emphasize protection of existing sites and development of an interpretive site at the Paleozoic Trackways. The Paleozoic Trackways Site could be expected to draw several thousand visitors each year because of the scientific significance of this resource. The economic effect

would be to increase travel and tourism to the Las Cruces area. The trackways site would also provide opportunities for education and research at the local and national levels. A negative economic impact associated with the development of the trackways site would be the closure of the area to mineral sales. A good deal of concern has been expressed over the looting of archaeological sites and the difficulty in protecting sites. The high black market values placed on Mimbres pottery, in particular, have caused an increase in the amount of trespass on sites and have created a severe law enforcement problem in the Resource Area. The result of damage to these sites is to reduce our future knowledge and appreciation of the history of man in the Southwest.

Existing wildlife HMPs would be followed in Alternative A. The contribution of public land to populations of wildlife in the Mimbres Resource Area is estimated to be approximately 40 percent (BLM 1984). Alternative A would produce little or no change in this amount. Wildlife habitat improvement projects would continue to provide some employment in the Resource Area. These improvements may produce some benefits for other resource uses, such as livestock grazing. Construction or other activities may be limited to protect areas which are critical to wildlife populations. These include nesting area restrictions for raptors, protection of desert bighorn habitat areas, and protection of riparian and arroyo habitats. All fences in the Resource Area are required to allow antelope passage. Hunters and conservationists would be expected to favor management of wildlife habitats to maximize game numbers and protect endangered, threatened, and sensitive species. Ranchers may regard wildlife as competitors for valuable forage, and they may regard the protection of habitats for listed species as conflicting with their efforts to produce livestock. The resolution of these conflicts may generate significant controversy.

Vegetation sales would continue to produce a small economic contribution under Alternative A. The use of native vegetation in local landscaping contributes to the "Southwestern" ambiance of the area and is important to local traditions.

Grazing exclusion in existing areas would be continued. This results in the loss of approximately 1,027 AUMs per year, a reduction

of approximately 0.2 percent of the livestock grazing in the Resource Area. A yearly loss of \$1,859 in grazing fees, and a loss of \$23,715 of total ranch income would be experienced in the Mimbres Resource Area. This is an insignificant amount considering that the total income from beef cattle in the Resource Area was estimated to be \$24,273,000 in 1989.

Vegetation land treatments could be expected produce an additional 94 AUMs of forage per section, if they are successful. If all of this increase is allocated to livestock, the gross economic return of the treatment would be approximately \$38,000 over the 20-year life of the treatment. The cost of treatment is \$9,600 per section, yielding a net benefit of \$29,400 per section treated, assuming that production remains constant for the 20-year life of the treatment, that no maintenance of the treatment is required, and that other economic factors of production remain constant.

IN SUMMARY, land ownership adjustments are the most significant actions proposed under Alternative A. Approximately 70,000 acres of land with development potential would be placed in private ownership in Dona Ana County. Even though PILT payments would be reduced, this would result in an increase of over \$900,000 in property tax receipts before any development occurred. The value of taxable property in Dona Ana County would increase by approximately \$175 million. This would have profound effects on land use and urban development in Dona Ana County.

There would be four ACEC designations on 16,300 acres in Alternative A and 14 WSAs covering 239,018 acres. A number of areas would not be designated as ACECs that conservationist would prefer to see designated.

A large part of the Resource Area (88 percent) would remain undesignated for vehicle use.

There would be closures for fluid minerals leasing and development on 12 percent of land in the Resource Area. There would be locatable exploration closure on 0.5 percent of land in the Resource Area, and there would be no closures for mineral materials disposal in the Resource Area. Mineral closures would not be expected to have a significant economic impact.

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Under Alternative A, recreational facilities would be expected to accommodate approximately

175,000 visitor use days per year, and generate approximately \$750,000 in gross receipts.

ALTERNATIVE B

MINERALS

Fluid Leasable Minerals

OIL AND GAS

The land identified for disposal has low potential for the occurrence and development of oil and gas. Consequently, the loss of these fluid minerals from public ownership would be insignificant.

Land identified for the acquisition of vehicular access and land adjacent to these areas has low potential for the occurrence and development of oil and gas. Consequently, the new opportunities for mineral exploration on this land would be insignificant.

Table 4-7 lists the acreage of public land that would be available under Alternative B for oil and gas development in comparison to the oil and gas potential.

GEOTHERMAL

Land identified for disposal in the vicinity of Las Cruces contains 800 acres of high geothermal potential and 2,200 acres of moderate geothermal potential. The relatively small amount of acreage being proposed for disposal would not result in significant impacts. Nevertheless, the transfer of these lands out of Federal ownership would preclude the opportunity for Federal leasing and development of these geothermal resources. Retaining the mineral estate in Federal ownership could lead to potential split-estate conflicts if the surface owner does not concur with geothermal development. However, low-temperature, direct-use geothermal applications such as space heating and domestic hot water heating would probably be compatible with surface uses.

About 11,800 acres of land having geothermal potential would be closed to leasing. Of this total, about 10,000 acres would be closed to leasing in the Rincon, San Diego Mountain, Dona Ana, Robledo Mountains, and Organ/Franklin Mountains ACECs. This could result in significant loss of

geothermal resource development potential in the planning area. These areas have moderate to high potential for the development of low-temperature, direct-use applications. The Las Cruces vicinity offers a Nationally significant geothermal resource that has prime potential for this type of development. If these areas are not available for leasing, there could be less incentive for aquaculture and greenhouse industries to locate here.

Table 4-8 lists the acreage of public land that would be available for geothermal development compared to the potential for geothermal resources.

Nonenergy Leasable Minerals

About 4,000 acres of land having moderate sodium potential in the Lordsburg Playa ACEC would not be available for public leasing and development. This would not be expected to result in any significant impacts. Unlike base and precious metals, there are vast reserves of sodium resources elsewhere in the United States.

Table 4-9 lists the acreage of public land that would be available for nonenergy leasable mineral development compared to the potential for these resources.

Locatable Minerals

Most of the land identified for disposal has low potential for the occurrence of locatable minerals. There are 900 acres of high potential land in the Silver City area that are identified for disposal. However, legal access to this public land is limited, so the loss of the public's opportunity for mining would not be significant. If the mineral estate is reserved to the United States, there could be conflicts between the surface owner and the mining claimants concerning surface damages.

Land identified for the acquisition of vehicular access and land adjacent to these areas have low potential for locatable minerals. Consequently, the new opportunities for mineral exploration on this land would be insignificant.

ALTERNATIVE B

TABLE 4-7
AVAILABILITY OF LAND FOR OIL AND GAS DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
ALTERNATIVE B

	<u>POTENTIAL FOR OCCURRENCE</u>			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	1,885,200	1,566,100	0	3,451,300
Open/Stipulations	152,000	122,000	0	274,000
Open/No Surface Occupancy	78,700	13,300	0	92,000
Not Open to Leasing	204,900	116,100	0	321,000
Nondiscretionary Closure (withdrawals)	168,500	408,900	0	577,400
Total	2,498,300	2,226,400	0	4,715,700

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-8
AVAILABILITY OF LAND FOR GEOTHERMAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
ALTERNATIVE B

	<u>POTENTIAL FOR OCCURRENCE</u>			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	3,155,200	206,600	56,700	3,418,500
Open/Stipulations	239,000	35,000	0	274,000
Open/No Surface Occupancy	92,000	0	0	92,000
Not Open to Leasing	309,200	11,800	0	321,000
Nondiscretionary Closure (withdrawals)	574,700	0	2,700	577,400
Total	4,370,100	253,400	0	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-9
 AVAILABILITY OF LAND FOR NONENERGY LEASABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
 (ACRES OF FEDERAL MINERAL ESTATE)*
 ALTERNATIVE B

	POTENTIAL FOR OCCURRENCE			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	3,680,500	12,000	0	3,692,500
Open/Stipulations	0	0	0	0
Open/No Surface Occupancy	91,520	480	0	92,000
Not Open to Leasing	317,600	3,400	0	321,000
Nondiscretionary Closure (withdrawals)	577,400	0	0	577,400
Total	4,667,500	15,400	0	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

Closing the Cooke's Range, Florida Mountains, and Organ/Franklin Mountains ACECs to mining would remove about 6,300 acres of land with high mineral potential and 12,000 acres of moderate potential land would from availability for exploration and development. Respectively, this represents about 12 percent of the high potential lands and 4 percent of the moderate potential lands. This would not result in any immediate or short-term impacts. However, there could be long-term, adverse, cumulative impacts if areas like these are removed from public ownership. It is then possible that exploration, development, and production may not occur thus depriving the United States of potential sources of base and precious metals.

Table 4-10 lists the acreage of public land that would be available for locatable mineral development in comparison to locatable mineral potential.

Salable Minerals

About 600 acres of land that are proposed for disposal are located on the Las Cruces East Mesa and have high potential for the development of sand and gravel. Although this would not result

in any significant impacts, the disposal of this land would preclude extraction of these mineral resources. Retaining the salable minerals in Federal ownership would not resolve this problem. Potential conflicts that would arise from the split ownership of the surface estate and mineral estate in an area of city expansion would probably prevent the extraction of sand and gravel.

About 8,300 acres of land having high potential for sand and gravel would be closed to material sales in the Organ/Franklin Mountains ACEC. This represents about 18 percent of the high potential sand and gravel between Las Cruces and Anthony. This area, along the east side of the Rio Grande Valley southeast of Las Cruces, could provide potential sources of sand and gravel as Dona Ana County continues to grow. If these lands are unavailable for mineral development, there could be significant impacts on the local economy. Sand and gravel are essential in the construction industries associated with the continued growth of an area.

Table 4-11 lists the acreage of public land that would be available for salable mineral development in comparison to salable mineral potential.

ALTERNATIVE B

TABLE 4-10
AVAILABILITY OF LAND FOR LOCATABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
ALTERNATIVE B

	<u>POTENTIAL FOR OCCURRENCE</u>			
	LOW	MODERATE	HIGH	TOTAL
Open	3,628,900	269,500	42,300	3,940,700
Closed	89,300	13,900	6,300	109,500
Nondiscretionary Closure (withdrawals)	599,000	30,200	3,500	632,700
Total	4,317,200	313,600	52,100	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-11
AVAILABILITY OF LAND FOR SALABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
ALTERNATIVE B

	<u>POTENTIAL FOR OCCURRENCE</u>			
	LOW	MODERATE	HIGH	TOTAL
Open	3,103,300	111,600	52,000	3,266,900
Closed	476,300	92,200	8,300	576,800
Nondiscretionary Closure (withdrawals)	836,600	0	2,600	839,200
Total	4,416,200	203,800	62,900	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

IN SUMMARY, land identified for disposal has low potential for the occurrence and development of oil and gas, so the loss of this mineral resource from public ownership would be insignificant.

The Lordsburg Playa ACEC would be closed to leasing and therefore unavailable for potential exploration and development of the sodium resources.

The Cooke's Range, Florida Mountains, and Organ/Franklin Mountains ACECs have high potential for the occurrence of locatable minerals. Closing these areas to mining would preclude exploration and development. If the mineral estate is reserved to the United States, there could be conflicts between the surface owner and the mining claimant.

Land identified for disposal near Las Cruces has moderate to high potential for geothermal resources. The loss of this resource from public ownership would preclude the opportunity for leasing and development. If the geothermal estate is retained in Federal ownership, development of the geothermal resources could lead to conflicts between the surface owner and the geothermal lessee. However, geothermal development can be compatible with surface uses.

Disposal of land near Las Cruces that has high potential for the development of sand and gravel would preclude the development of this mineral resource. Retaining the salable minerals in Federal ownership would lead to potential split-estate conflicts because mining of mineral materials is not compatible with surface use. Closing the Rincon, San Diego Mountain, Dona Ana, Robledo Mountain, and Organ/Franklin Mountain ACECs to geothermal leasing would preclude leasing and development of this resource. Portions of these areas offer the potential for the discovery and development of low-temperature, direct-use geothermal resources.

LANDS

The 42,090 acres of public land identified for disposal consists of isolated parcels located mainly in Luna and Grant counties. Disposing of these hard to manage areas would provide the potential for placing land in such uses as agricultural, commercial, or residential.

As part of this alternative the BLM would pursue the acquisition of approximately 129,170 acres of State trust land and 97,804 acres of private land within the existing and proposed ACECs to improve manageability by eliminating private and State trust inholdings with potential for conflicting uses. Consolidation of the public land would significantly improve management efficiency, effectiveness, and cost; and block up key areas providing improved protection for identified special values.

BLM would carry out multiple-use management on 3,011,730 acres of public land as well as authorize multiple-use actions providing opportunities for companies and individuals to use public land.

Legal vehicular access to certain public land would enable some applicants to locate site rights-of-way easier and coordinate with only one landowner. Administrative or legal access across private land to public land creates better management conditions for the BLM.

Approximately 317,230 acres of exclusion area would be created which would prohibit the issuance of new right-of-way grants, except where existing right-of-way corridors occur. Approximately 1,134,570 acres would be identified as avoidance areas which would restrict construction and maintenance activities as well as the size and type of actions to be authorized. These designations could make right-of-way construction more difficult and expensive for utility companies. Utility routes may deviate more and therefore require longer rights-of-way, the increasing the amount of surface disturbance. However, areas open for right-of-way development would be easier to identify. (See Glossary for definitions of right-of-way exclusion areas and right-of-way avoidance areas.)

IN SUMMARY, land ownership adjustments would occur on approximately 2.5 percent of the public land within the Mimbres Resource Area. Approximately 226,974 acres of State trust and private inholdings within ACECs would be acquired to improve manageability. Approximately 3,011,730 acres of public land would be managed for multiple-use under BLM administration. Right-of-way placement would be excluded from 317,230 acres of public land, except in existing

ALTERNATIVE B

right-of-way corridors, and would be restricted on an additional 1,134,570 acres. These right-of-way exclusion and avoidance areas could require longer routes and more expense for right-of-way applicants. However, areas open for right-of-way development would be easier to identify.

ACCESS

Disposal of isolated public land parcels under Alternative B would not significantly affect access to other public land since these parcels are small, isolated tracts that are not generally used to access other public land. Most of these parcels have no existing legal access to them, and many are behind locked gates on adjacent private land where they are not currently available for use by anyone but the grazing permittee. Reservation of easements upon disposal of this land could be used to maintain any existing access to Forest Service, State trust, or private lands. State trust land could become better blocked throughout southern Grant County and northwestern Luna County as well as other areas where State trust land is currently dominant, enhancing manageability of those lands by the State Land Office and improving their management efficiency.

Acquisition of State trust and private lands would greatly enhance both foot and vehicle access to, and foot access across ACECs and other SMAs throughout the Resource Area. Accessibility of public land would be improved by achieving better uniformity of land ownership on the public land, and reducing land ownership boundaries in those areas of the Resource Area that receive the highest levels of public use, including most of the mountain ranges from the Organ Mountains to the Arizona border and the Gila Lower Box. Acquisition of Picacho Peak would improve access to Box Canyon and the southern end of the Robledo Mountains.

Study of four new areas for wilderness suitability and associated interim management would not significantly hinder access to and across public land.

Vehicle closures would curtail vehicle access to 73,130 acres of public land including the Apache Box, Bear Creek, Gila Middle Box, Gila Lower Box, Lordsburg Playa, Uvas Valley, and Box Canyon ACECs and lands along the Mexican

Border. Vehicular access to these lands would still be available, and foot access across these areas would not be affected.

Vehicle limitations would restrict vehicular access to designated routes on 3,010,230 acres of public land. Access along most existing routes would not be greatly affected.

Development of new foot and vehicle access routes would be conducted through easement acquisition across State trust and private lands and through road and trail construction. Access route development and acquisition would improve the existing network of public land access routes to provide the public with sufficient opportunity to enjoy the full spectrum of public land uses.

Vehicular access would be increased in areas designated as open to rights-of-way, fluid mineral leasing, locatable mineral entry, and salable mineral development although fewer opportunities for development of access would be available under this alternative than under Alternative A.

IN SUMMARY, disposal of isolated parcels of public land would not significantly deter access to and across public land, while acquisition of non-Federal inholdings would enhance legal, vehicular, and foot access to and across vast acreages of public land throughout the Resource Area. Vehicle closures would end vehicular access across seven ACECs and within 1 mile of the Mexican Border in Dona Ana and Luna Counties. Vehicle limitations would limit vehicular access to designated roads and trails over most of the Resource Area. Commodity development would enhance vehicular access within the Resource Area at a slower rate than that of Alternative A.

LIVESTOCK GRAZING

Lands actions involving the sale or exchange of 42,090 acres could have a long-term impact on livestock grazing if these lands were eventually excluded from grazing allotments. Because most of the parcels are a section or less in size, even if withdrawn from grazing, the loss of AUs to the allotment as a whole would be minor. Some of these parcels are in allotments, which if disposed of, would no longer contain any public land. Under this Alternative, there could be small portions of 111 allotments affected (see Table 4-

12). The owner of any permanent range improvements would be compensated for adjusted value of their interest in the improvements. If land was exchanged or sold and the new owner leased the land back to the permittee, grazing control of the base property, livestock grazing numbers, and use would remain the same. The multiple-use management of 3,011,730 acres of land in Federal ownership would allow, with prescribed livestock management, continued grazing use on the public land. The acquisition of State trust and private lands would block up public land and aid in the management of livestock grazing. On these acquired lands, if a determination was made that these lands could be grazed the carrying capacity would be adjusted accordingly. Most of these actions would alter livestock use patterns. The percent Federal Range, or the revenues paid the U.S. Government, would change with each land action.

Elimination of livestock grazing within nine ACECs totalling 201,470 acres could have an adverse impact on grazing operations in those areas. In order to remove livestock from these areas, additional fencing and watering facilities may be needed. Thirty-four allotments within these areas could lose approximately 2,451 AUs. Livestock grazing patterns would be disrupted in the short-term. The percent Federal range would also change. Benefits to vegetation species derived from grazing such as old growth removal and plant stimulation would not be realized. New grazing activity plans developed for some ACECs such as the Aden Lava Flow, or revision of old plans such as the Tres Hermanas AMP would benefit grazing in the long-term by improving distribution patterns and allowing rest for forage species. The four areas for wilderness study are included in 14 allotments. This designation could make the development and maintenance of range improvements more difficult and time consuming in complying with the interim management requirement. The monitoring of livestock movements, salting and supplementing would also be more difficult. Limiting vehicles to designated or existing roads and trails would limit livestock and human interaction.

Intensive vehicle use would continue in existing open areas (4,160 acres). The two allotments containing these intensive use areas have the potential for more problems with livestock

harassment and vandalism. These allotments are Price (No. 15009) and B&W Cattle Co. (No. 03008). Having intensive use areas takes some of the pressure off the rest of the Resource Area. Most of the vehicle use in the rest of the Resource Area would be limited to designated roads and trails. This would limit human and livestock interaction. Vandalism would not change as most roads and trails lead to range improvements. Closed vehicle use areas, totalling 110,790 acres, could make livestock and range improvement monitoring and maintenance more difficult, costly and time consuming but would limit the interaction between livestock and humans.

Access routes could alter livestock patterns as they are developed. New routes, mainly for nonvehicular access, could increase livestock and human interaction which leads to increased animal harassment and vandalism.

Rights-of-way would cause initial disruption in normal livestock patterns during the construction stage. With the completion of the lines or sites normal patterns would resume. The designation of exclusion and avoidance areas would prevent even the short-term impacts associated with right-of-way development.

Some disruption to livestock patterns would occur with all mineral activity over the short-term. Most animals would adapt after a short period of time. Areas closed to mineral entry would ensure no disruption to animal activity. Areas closed to mineral material sale would eliminate problems between users and livestock.

The two existing Special Recreation Management Areas (SRMA) would continue to be managed taking livestock and recreational needs into account. Grazing activity plans will minimize interaction between recreation users and livestock. These will be developed on the two allotments within the SRMAs.

Wildlife management through six existing and six new HMPs would continue to benefit the grazing program by identifying potential problems and proposing solutions to these problems. Forage reserved for wildlife species would be identified after monitoring and incorporated in all range and wildlife plans. Some adjustment in livestock

ALTERNATIVE B

TABLE 4-12
ALLOTMENTS POTENTIALLY IMPACTED BY LAND DISPOSAL ACTION
ALTERNATIVES B, C, AND D

Allotment Number	Allotment Name	Total Preference
01077	Brockman Homestead	348
01518	Jakie McCants	36
01550	Muir-West	120
01553	Alan Koff	36
02001	Edwin W. Allen	156
02031	Dennis Johnson	420
02051	Steeple A	2,628
02501	W. T. Anderson	108
02502	Marquerite Benedict	144
02503	Red Mountain Ranch	240
02504	Cerro Mesa Ranch	1,056
02505	Black Mountain Ranch	420
02506	Hatcher - East	12
02508	James W. Hurt	708
02509	John William Hatcher	60
02511	Joe Hervol	12
02512	Mrs. Claude S. Irwin	24
02513	Sweetwater Past	84
02514	G. A. Jones Lease	24
02515	Kretek Corporation	24
02516	Jessie Mauer	96
02517	J. L. McCauley Estate	288
02518	Joe Bill Nunn	144
02519	Simpson Lease	528
02520	Waterloo	528
02521	Richardson, et al	12
02522	Tony Salopek	48
02523	Frank Smyer	60
02524	Nadine Speir	612
02525	Cerro Mesa Ranch	120
02526	Benoist Lease	336
02528	Butterfield	180
02529	POL	12
02530	Butterfield Trail	324
02532	Cienega Ranch	432
02533	C. W. Gaines	24
02534	Foster Lease	12
02535	Burdick Hills West	24
02536	Koenig Lease	36
02537	Shelby Phillips	136
02539	May, Inc.	252
02540	Mashed O Venture	36
02541	Acosta Lease	24
02542	Southwest Ranch	132
03008	B and W Cattle Co.	985
03027	O. L. Smith	444
03031	Las Uvas Ranch	3,089
03044	Western Oil Company	408
03058	Palma Park	828
03061	Garfield	444
03062	Johnson Spring	756
04501	Langford Keith	204
04502	F. L. McCauley Lease	984
04503	Pine Canyon Lease	1,140
04504	Onda & Associates	504
04505	Hatcher - West	48
04506	Hollimon	1,332
04507	Lewis Brown	12
04508	Faywood Lease	12
04509	96 Creek Lease	48
04510	Crumbley Brothers	12

TABLE 4-12 (Concluded)
 ALLOTMENTS POTENTIALLY IMPACTED BY LAND DISPOSAL ACTION
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Allotment Number	Allotment Name	Total Preference
04511	De La O Estate	60
04512	Delancey Lease	60
04513	Upton Mountain Lease	348
04514	Forrest Kelk	888
04515	Robert D. Upton	60
04516	Wayne Dickerson	1,020
04517	2C Ranch Lease	1,068
04518	J. McDonald Lease	168
04519	Whiskey Creek	120
04520	C. Larry Foster	60
04521	Foy Partnership	132
04522	Franks Ranch, Inc.	1,500
04523	Marie M. Frost	708
04524	Marvin Glenn	48
04525	Genevieve Gunter	1,620
04526	Harrington Ranch	120
04527	W. B. Hinton	180
04528	Mrs. Joe Hooker	780
04529	Pitchfork Ranch	1,104
04530	Casas Grandes	499
04531	Childress Lease	24
04532	Harry McCauley	48
04533	Marie Brock McCauley	720
04534	J. A. McCauley Lease	36
04535	Ogilvie Ranch	120
04536	T. Carroll Niblett	72
04537	Greenwood Ranch	1,008
04538	Three Sisters	12
04539	Roland Rice and Son	156
04540	Della W. Richardson	12
04541	Spires Cattle Co.	648
04542	Strain Lease	12
04543	Todd and Pugmire	132
04544	Boston Hill Lease	12
04545	Brockman Lease	24
04546	Wesley Brown	156
04547	Eby Ranch	1,224
04548	James E. Norris	528
04549	Nadine E. Moore	960
04550	Hooker Lease	12
04551	Clint Johnson, Jr.	12
04552	Moon Ranch	24
04553	Genevieve Gunter	12
04554	Capulin Cattle Co.	432
04555	Jarrell Ranch	1,136
04556	Reich Ranch	24
04557	Fierro Allotment	24
04598	7XV Ranch	60
15002	A. B. Cox Trust	1,759
15004	Anthony Gap	492
15007	Jeff Isaacks	1,905
15008	R. L. Isaacks	396
15009	Bishop's Cap	1,593
15010	Tex-Line	180
15012	S. A. Walter	168
TOTAL NO. OF ALLOTMENTS 111		TOTAL PREFERENCE 46,982

Source: BLM Files, 1990.

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numbers may be needed as vegetation treatments are limited under this Alternative. Whereas most wildlife conflicts can be resolved with a plan, bighorn sheep and livestock grazing would continue to be a problem until all needed improvements are constructed to separate the two. Coordinated activity planning would aid in the resolution of this problem.

New watershed activity plans in eight critical watershed areas, upon implementation, would improve ground cover and soil loss. Forage would improve for a variety of users including livestock. Rotation grazing schemes would be an integral part of these water activity plans. Some constraints, such as livestock removal for certain periods, could be placed on grazing practices in these activity plans.

Sales of native plants in existing sale areas and the new area between Lordsburg and Deming would impact livestock to a small degree from the increased human activity and associated off-road vehicle use on those allotments. The new sale area would probably include yuccas, ocotillo, and desert willow. Livestock show a preference for yucca stalks in the spring.

The Desired Plant Community for this Alternative would involve no use of chemical herbicides to change plant structure and composition. This Desired Plant Community is based on the present situation and the assumption that burning usually only sets plant succession back and does not change the existing plant community. Grass burns would improve forage conditions, however, under this Alternative, most increases would be allocated to wildlife and watershed. Those areas that are brush dominated would remain.

The 30 percent use level set on black grama could have a significant impact on livestock grazing use. Use levels at the present time are based on a 50 percent proper use level and lowering that level by 20 percent would similarly affect livestock AU levels. Black grama is one of the most palatable species in the Resource Area. In order to achieve proper use levels (average 50 percent) on other forage species and not over use black grama, some sort of grazing rotation would be needed. The long-term impacts of any rotation system are usually positive.

Livestock grazing would be eliminated on 163,290 acres, all within ACECs. Livestock grazing patterns would change. The AUs and percent federal range would be reduced. Additional fencing and watering facilities would be needed to keep livestock out of these areas and provide for continued proper grazing management. Benefits which could be derived from proper grazing management such as old growth removal, fertilization, plant stimulation and seedling germination would not be realized.

Most of the riparian habitat falls in areas that would be excluded or eliminated from livestock grazing. These are usually small areas, and in most cases fencing would not impact grazing operations.

Special status plants and their habitat would receive additional emphasis in ACEC management prescriptions. Management would be designed to enhance and protect identified species and their associated habitat. The exclusion of grazing in these areas could contribute to a small loss in AUs and some minor adjustment in grazing patterns.

IN SUMMARY, the acquisition of lands, and vehicle use limited to designated roads and trails would have short- and long-term positive impacts by limiting the interaction between livestock and humans maintaining the land base. Because of the increased acreage under protection in this Alternative, portions of 111 allotments, could be negatively affected from the designation of ACECs, which includes the elimination of livestock grazing on 201,420 acres, and 30 percent use on black grama, causing a loss of up to 2,451 AUs.

VEGETATION

The disposal of public land could impact the vegetation resources in those areas. Lands under BLM jurisdiction are managed and protected under the multiple-use mandate. Disposal lands are usually identified for city expansion. Subsequent development usually requires leveling, clearing and other surface disturbing activities. Some of the identified land is on the East Mesa and some are scattered parcels in Luna and Grant counties. All lands are one section or less in size. Acquired lands from the State and private sector

would come under the multiple-use and protection mandate. Many of the acquired lands would possess rare or unusual plant communities.

The designation of ACECs would provide an extra measure of management and protection to the native vegetation. Many of the ACECs have been identified for biological reasons. All vehicular traffic would be limited to designated roads and trails in these ACECs until the area is closed to vehicle use. Parking or camping areas have been identified in some of the ACECs. The removal of vegetation from these actions, under this Alternative, would be approximately 11 acres. Livestock grazing if permitted, would require a grazing activity plan. Mineral entry opportunities in these areas would be severely limited thereby protecting the resource. Interim Management Policy restrictions on activities in the four areas for wilderness study would provide additional protection to the vegetation resources. Vehicle use would be limited to existing roads and trails. The maintenance of vegetation in its natural state is an objective of wilderness interim management.

There would be 4,160 acres of existing open off-road vehicle use areas. While vegetation in these areas could continue to be impacted, the surrounding areas should sustain less abuse from vehicle use. Limiting vehicle use to designated roads and trails would be the best way to protect the vegetation resource. Closed areas would prevent vegetation resource damage from vehicle use.

Development of new nonvehicular access would cause vegetation disturbance along the length of the new route. Vegetation loss would be minimal.

The designation of right-of-way exclusion areas and right-of-way avoidance areas would prevent or greatly limit vegetation disturbance in these areas. Impacts to vegetation would be short-term. Reseeding and vegetation recontouring stipulations would mitigate long-term impacts.

Areas closed to mineral entry for locatables, leasables, and material sales would prevent vegetation disturbance from mineral actions. Areas still open to mineral entry would have some initial vegetation loss. All disturbed areas would be recontoured and reseeded. Native plants are made available to the public whenever possible.

Successful reclamation is dependent upon climatic conditions.

Six new HMPs would establish vegetation management objectives for wildlife and other uses and outline ways to achieve these objectives. These plans should balance use levels on key species used by wildlife and livestock. Key vegetation species should improve and increase. Project development could cause minor (less than 10 acres) short-term impacts from some loss of the vegetation resource.

Watershed activity plans for eight critical watershed areas would benefit the vegetation resource by providing for the stabilization of the soils and reestablishment of native vegetation species. Project development could cause some short- and long-term vegetation loss through the development of structures to alter the flow of surface water.

Sales of native plants in the existing areas and the establishment of a new sale area between Lordsburg and Deming would cause minimal damage to the vegetation resource. Yucca, ocotillo and desert willow are the species identified for the new area. Some off-road vehicle use is required for removal.

The Desired Plant Community concept, under this Alternative, would be to maintain the vegetation in its present state. Small changes in composition would occur with the use of prescribed and natural fire. Riparian areas would also improve under grazing management. This Desired Plant Community is based on the assumption that prescribed burning usually only sets plant succession back and does not change the existing plant community. Future brush invasion would be limited. Fire should also remove old growth and improve palatability. Creosotebush, mesquite and many mixed desert shrub areas usually do not have enough ground cover to carry a burn. Therefore, without chemical treatment of these areas, they would remain in their present brush dominated condition. Areas presently dominated by brush species do not allow for species diversity and in many cases contribute to soil loss.

Setting the maximum use level on black grama of 30 percent would ensure longer-term survival of black grama even in a drought condition. Since

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black grama is a preferred species, all associated species would benefit as their use in most cases would be even less.

Eliminating livestock grazing would protect forage species from possible livestock over use. Improvement in vegetation conditions could occur from the removal of livestock but by the same token the benefits which can be associated with proper grazing management such as old growth removal and plant stimulation from proper grazing would not be realized.

Riparian and arroyo habitats under this Alternative would be excluded from livestock grazing. Most surface disturbing activities would occur outside these zones. All of the areas are closed to vehicle use or limited to designated roads and trails. Visitor use would be directed away from most riparian areas. All of these measures would help in the short- and long-term reestablishment of riparian vegetation.

IN SUMMARY, beneficial impacts to the vegetation resource would occur from the following actions: acquisition of land, ACECs, areas for wilderness study, vehicle use limited to designated roads and trails, watershed activity plans, 30 percent use on black grama, and elimination of livestock grazing. Large areas would remain in their present brush dominated condition. The disposal of public land would have short- and long-term negative impacts from potential vegetation loss.

SOIL/AIR/WATER

Soil

Under this alternative, lands identified for disposal would be the responsibility of State and local governments following their disposal. Fewer acres would be available for disposal on the East Mesa than in Alternative A, therefore fewer acres would be subject to possible soil disturbance. Lands near urban centers could be subjected to clearing, levelling, and construction activities. Any soil loss from accelerated erosion would be irretrievable. Lands away from urban centers could be subjected to unregulated surface activities such as grazing, mining, and recreation use. Improved manageability by acquisition and consolidation of

lands would protect the soil resource because activities on these lands would be regulated and limited in their scope and extent.

The designation of 30 ACECs is a significant increase over Alternative A. ACEC management prescriptions would protect the soil resource on these areas by acquiring lands, limiting off-road vehicle use, and closing these areas to mineral material sales and fluid mineral leasing. Surface disturbance on approximately 20 acres from fencing, parking, and primitive camp development would occur.

Limited and closed off-road vehicle designations would protect five to six times more area than in Alternative A. This would protect soils by reducing surface disturbance and loss of vegetation. Activities on areas presently open to off-road vehicle use would be subject to continued soil surface disturbance, compaction and vegetation loss.

Developing new access into inaccessible areas could involve surface disturbing activities such as road construction. New road construction could increase the soil susceptibility to wind and water erosion at least during construction activities.

Designation of right-of-way avoidance areas would benefit the soil resource because if rights-of-way must be located in these areas they would be subject to special stipulations to minimize affects from construction activities. Designation of right-of-way exclusion areas would benefit the soil resource because surface disturbing activities associated with the right-of-way would not occur in these areas. Areas open to right-of-way (subject to standard stipulations) would be affected by soil surface disturbance activities such as construction and continued use of the right-of-way by vehicles.

Exploration and development of fluid minerals on lands which are open to leasing (subject to standard stipulations) would affect the soil resource by disturbing surface soil near exploration sites by activities such as construction of access, drilling, site clearing and in the case of development, utilities installation, structures and additional access if needed. There is low oil and gas potential within the Resource Area. The soil resource on areas closed to fluid mineral leasing would not be impacted by surface disturbing

activities associated with fluid mineral exploration and development.

Activities in areas open to locatable mineral entry would result in site-specific soil disturbance from drilling, trenching, mining, construction of access roads, clearing of sites, and deposition of tailings from the mine. Areas closed to locatable mineral entry would not be subjected to soil disturbance from locatable mineral activities.

Activities in areas open to salable mineral disposal (subject to standard stipulations) would result in the removal of the soil surface, construction of access roads, clearing and levelling of sites for equipment and salable material storage. Areas closed to salable mineral disposal would not be subjected to soil disturbance from salable material disposal activities. Alternative A does not have any areas closed to mineral material disposal.

The two existing SRMAs, Organ Mountains and Gila Lower Box, would continue. The remainder of the Resource Area would be managed primarily for dispersed recreation opportunities. In the Organ Mountains, SRMA activities which may impact the soil resource (hiking and camping) by causing erosion and soil compaction, are limited to designated and maintained trails and campgrounds at Aguirre Spring Recreation Area and designated and maintained trails at Dripping Springs Natural Area and established but unmaintained trails throughout the remainder of the Special Recreation Management Area. The Gila Lower Box SRMA is subject to unrestricted hiking and camping, and soil erosion and compaction may occur where unmaintained trails and campsites are found.

Implementation of the existing six HMPs and development of six additional HMPs would provide protection to the soil resource in these areas because activities which may occur in these areas are generally limited in scope and extent by existing management guidelines. Impacts to the soil surface from habitat development projects would be limited and would not be permanent.

Removal of the Persian ibex from the Florida Mountains would protect the soil resource and may reduce erosion because the vegetation which protects and holds the shallow soils on heavily browsed areas would be allowed to regrow.

Developing watershed plans on eight areas would improve, protect, and enhance the soil resource by improving vegetation ground cover, reducing erosion, and reducing runoff while increasing percolation of water into the ground. These results would be realized by improving grazing practices, restricting off-road vehicle, mining, and recreation activities on these areas.

Soil surface disturbances in the five existing vegetation sale areas in Dona Ana County and the addition of a vegetation sale area near Deming would be limited to specific sites where digging of individual plants occurs and where off-road vehicles are used within these sale areas.

Prescribed fires would have short-term impacts on soil because vegetation cover would be removed and some erosion may occur (regrowth in 1 to 2 years). Hot spots in fires can alter physical soil surface properties by reducing organic matter, decreasing nitrogen content and reducing soil microbes (Wright and Bailey 1982). These alterations are not permanent and recovery occurs with revegetation of the area. Improved grazing management would benefit the soil resource through increased herbaceous ground cover, limited impacts to soil from cattle trails and sacrifice areas near water.

The exclusion of grazing would eliminate impacts associated with grazing on nearly 7 percent of the Resource Area. Erosion may be reduced through increased ground cover, erosion and compaction caused by cattle trails to and from water would be eliminated, and sacrifice areas near water sources would not exist after a period of recovery.

Secured instream flows would benefit the soil resource because water levels within stream channels would be maintained allowing streamside vegetation to increase resulting in stable stream banks and dense ground cover to trap silt carried by flood waters.

IN SUMMARY, under this alternative, developing prescriptions for the management of 30 ACECs, watershed planning, development of six additional habitat management plans, off-road vehicle limitations, and closure of areas to locatable mineral entry, mineral material disposal, and fluid mineral leasing would reduce soil surface disturbance and erosion.

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Air

Lands identified for disposal would not be managed by the BLM. Restrictions on activities would be the responsibility of State and local governments. Activities such as clearing, levelling, and construction may affect air quality during construction phases. These lands are primarily on the East Mesa near Las Cruces and are significantly less than the amount proposed under Alternative A. Acquisition and consolidation of lands resulting in improved manageability would maintain or improve air quality because activities on these lands would be limited in scope and extent.

Designation of 30 ACECs would help maintain air quality over these areas by limitations on off-road vehicle use, closures to mineral material and fluid mineral activity, and acquisition of land. Two proposed ACECs (Big Hatchets, Florida Mountains) would be managed as Class II for air quality by monitoring and working with the State of New Mexico.

Proposals for four additional areas for wilderness study would help maintain air quality over these areas because under Interim Management Policy guidelines activities within these areas would be limited in scope and extent.

Under this alternative, areas closed to off-road vehicle use would help maintain air quality over a greater area. Off-road vehicle activity degrades vegetation and disturbs the soil surface which would increase wind erosion and dust in the air. Potential impacts to air quality would be significantly decreased under this alternative since large portions of the Resource Area would be limited to designated roads and trails. Areas open to off-road vehicle use would be subjected to continued vegetation degradation and soil disturbance and wind erosion would continue to add dust to the air in these areas.

Vehicle access would rely mainly on the existing system of Federal, State, and County roads. Additional access, if needed, would be developed through a plan amendment. This alternative emphasizes development, if needed, of foot access.

Designation of right-of-way avoidance areas would help maintain air quality because rights-of-way

would not be allowed in these areas without special stipulations. Designation of right-of-way exclusion areas would help maintain air quality because soil disturbances and vegetation loss associated with right-of-way activities would not occur. Activities in existing right-of-way open corridors could periodically reduce air quality from construction and vehicle activities over the immediate area. Most air quality reduction occurs during construction activities.

Activities in areas open to fluid mineral leasing would affect air quality in localized areas during exploration and development of these resources. Activities such as access, construction, and site preparation during exploration would increase dust levels. Development activities such as access construction, site preparation, and utilities construction would reduce air quality over the area of development. Areas closed to fluid minerals leasing would not be subjected to air quality reduction from fluid mineral leasing activities. Activities in areas open to fluid mineral leasing with specific stipulations would not greatly affect air quality. Type of activities would be limited in scope and extent.

Areas open to locatable mineral entry would be subjected to air quality reduction in localized areas from activities such as construction of access, digging, and exposure of disturbed soil and tailings to wind erosion. Areas closed to locatable mineral entry would not be subjected to soil disturbing activities which would reduce air quality from dust. Areas open to mineral material disposal would be subjected to air quality reduction in localized areas from dust caused by construction and use of access, removal of vegetation, disturbance of topsoil, and exposure to wind which would carry the dust to other locations. Areas closed to mineral material disposal would not be subjected to air quality reduction caused by mineral material disposal activities.

Watershed planning on eight areas would help maintain air quality over these areas through management practices such as improved grazing practices and restrictions on mining, off-road vehicles, and recreation activities. Activities resulting from watershed planning would maintain or increase ground cover and reduce soil disturbance.

Prescribed burning would have short-term effects on air quality from smoke (1 to 3 days).

IN SUMMARY, under this alternative, management prescriptions for 30 ACECs, watershed planning, HMP development on six additional areas, off-road vehicle limitations, and closure of areas to locatable mineral entry, mineral material disposal, and fluid mineral leasing would protect and enhance the vegetation which would protect the soil surface from wind erosion which adds dust to the air.

Water

The land identified for disposal under this alternative is significantly less than the acreage identified in Alternative A so potential impacts would be less. BLM would no longer have management responsibility and an indirect result of disposal could be urbanization which would be controlled by State and local regulations. Acquisition and consolidation of land would help maintain water quality because activities on these lands could be managed to protect the resource and would be limited in scope and extent.

The development of management prescriptions for 30 ACECs would protect surface and ground water resources on these lands. The ACEC prescriptions would limit off-road vehicle and right-of-way activities, close these areas to mineral material disposal and fluid mineral leasing, and require management of or elimination of livestock grazing in ACECs which contain riparian areas.

Recommendations to protect the values identified through the wild and scenic river for portions of the Gila River which are on public land would limit activities and would protect and enhance wild and scenic river values such as scenic quality, wildlife and fish, recreation, geology and cultural.

Under this alternative, areas closed to off-road vehicle use would be significantly greater than Alternative A. Fewer areas would be subjected to vegetation loss or soil surface disturbance. Water erosion of exposed soil would decrease and water percolation into the ground would increase. Under this alternative, areas with limited off-road vehicle use would be significantly greater than the area proposed in Alternative A. This would reduce disturbance to soil and vegetation as well as

sediment production that could find its way into streams. Areas open to off-road vehicle use would be subjected to continued soil disturbance, vegetation loss, and water erosion would continue to degrade these areas.

Watershed planning would provide management for land which is subject to excessive water erosion. Activities associated with grazing, mining, recreation, and off-road vehicle use would be managed to improve grazing practices and limit or mitigate mining, recreation and off-road vehicle uses.

Prescribed fires stimulate vegetation growth and increase ground cover which would reduce erosion and increase percolation of water into the ground (Wright and Bailey 1982). There may be a short-term increase in runoff (1 to 3 years) until the area revegetates and ground cover is re-established.

Exclusion of grazing may increase vegetation ground cover which would reduce runoff and increase percolation of water into the ground.

Secured instream flows for the Gila Lower Box and Gila Middle Box would enhance riparian vegetation communities and stabilize stream banks, which reduces the impacts of flooding by slowing down water flows which allows for increased percolation and sediment collection.

IN SUMMARY, under this alternative planned actions such as development of management prescriptions for 30 ACECs, management of WSAs, closure of areas to mineral material disposal and fluid mineral leasing, limited off-road vehicle use, watershed planning, and elimination or restrictions for livestock grazing in riparian areas would benefit the water resource. Benefits would result from reduced erosion, increased percolation of water into the ground, and protected or improved watersheds.

WILDLIFE

Fewer acres of public land would be disposed of near Las Cruces resulting in fewer potential impacts to wildlife on the East Mesa. Land disposed of near urban areas could be subjected to development activities which could degrade habitat and reduce wildlife populations such as

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small mammals, birds, and reptiles. Disposed lands away from urban areas could also be subjected to unregulated activities such as increased grazing, mining, and recreation, which could degrade habitat. Acquisition and consolidation of lands resulting in improved manageability by blocking up lands would benefit wildlife because they may contain significant or sensitive habitat for wildlife. Additionally these acquired lands could serve as a buffer for sensitive habitats.

Designation of 30 ACECs protect all special or significant habitat in the Resource Area. This would benefit wildlife because lands would be managed for multiple-use and acquired, areas would be closed to mineral material sales and fluid mineral leasing, restrictions or limitations would be placed on right-of-way and off-road vehicle activities, and in areas of sensitive habitat livestock grazing would be excluded or special management of grazing would be required. The proposed ACEC designations under this alternative are significant increases over Alternative A.

The addition of four areas for wilderness study would protect and enhance wildlife habitat because activities on these areas would be limited in scope and extent because of Interim Management Policy restrictions. Management of these areas may restrict certain types of habitat improvement projects.

Special management restrictions related to the wild and scenic river for the Gila Lower Box and Gila Middle Box would protect and enhance riparian wildlife habitat which is found along the river and free flow of water would maintain habitat for fish species. All activities which may affect wild and scenic river qualities would be limited in scope and extent.

Under this alternative, lands closed to off-road vehicle use would be significantly higher than lands closed under Alternative A. These lands would not be subjected to habitat degradation from vegetation loss and soil disturbance. Limiting off-road vehicle use to designated roads and trails compared to Alternative A, where most of the Resource Area is undesignated, would prevent widespread habitat degradation. Some degradation may occur near these roads and trails.

Areas open to off-road vehicle use would continue to be subjected to habitat degradation (Bury, et al. 1977).

Access would rely mainly on the existing system of Federal, State, and County roads. Additional access may be developed, if needed, through a plan amendment. Under this alternative, the emphasis would be on foot access. If additional access is allowed, increased activities within wildlife habitat may occur. Depending on the location, there could be wildlife habitat degradation.

Designation of right-of-way avoidance areas would prevent or minimize disturbances to wildlife and wildlife habitat. If a right-of-way is needed through these lands, stipulations would be required to minimize habitat degradation and wildlife disturbance. Right-of-way exclusion areas would not be subjected to activities which would degrade habitat. Areas open to rights-of-way (subject to standard stipulations) would be subjected to habitat degradation and wildlife disturbances from activities associated with installation of utilities and vehicle use along the rights-of-way.

Activities on land open to fluid mineral leasing would affect wildlife by site-specific habitat degradation during exploration activities such as access construction and drilling. There is low oil and gas potential on the Resource Area. Prolonged development of fluid minerals resources would degrade habitat and reduce wildlife populations from larger areas which include developed fields, access, and utilities such as pipelines. Areas closed to fluid mineral leasing would not be subjected to fluid mineral leasing activities which would degrade habitat. Designation of areas open to fluid mineral leasing with site-specific stipulations would limit or reduce impacts to wildlife and wildlife habitat.

Areas open to locatable mineral entry would allow activities such as access construction, drilling, site levelling, and clearing for storage of equipment, minerals, and tailings would degrade habitat on the areas of activity. Effects from exploration activities would be short-term while the development of mines would have long-term effects. Areas withdrawn from locatable mineral entry would be significantly increased. These areas

would not be subjected to exploration and development activities which could degrade habitat.

Extraction of salable mineral materials results in the removal of surface vegetation and soil surface, construction of access roads, and clearing and levelling of a site for storage and placement of equipment and mineral material. These activities would degrade habitat. Areas closed to mineral material disposal would not be subjected to mineral disposal activities which would degrade habitat and displace wildlife.

Continued implementation of six existing HMPs and the development of six additional HMPs would impact wildlife by protecting and enhancing wildlife habitat in these areas. At present, these areas have an estimated population of 1,680 deer, 60 to 80 desert bighorn sheep, and 500 antelope (most of which occur on private or State trust lands). Proposed minimum population levels in these existing and proposed HMP areas would result in an increase of 2,970 deer, a 64 percent increase over present, 1,245 desert bighorn sheep (dependent upon transplants proposed under this alternative), and 300 antelope occurring primarily on public land.

Removal of ibex from the Florida Mountains would eliminate competition for forage, cover, and space between ibex and native wildlife, particularly mule deer. It may also make it possible to reintroduce desert bighorn sheep to the area.

Development of watershed plans for eight critical watershed areas would protect and enhance wildlife habitat components (vegetation and soil) by management activities such as erosion control projects, grazing management, and recreation management.

Prescribed fire projects would benefit wildlife by improving habitat. Habitat improvements realized from prescribed fires on fire dependant vegetation communities are increased browse and forage, increased habitat diversity, and a continuation of natural vegetation community development (Wright and Bailey 1982).

Exclusion of grazing would reduce competition between livestock and wildlife in key habitats

(particularly for desert bighorn sheep) for forage, cover, and space. Important habitat features within these areas such as high saddles, thickly vegetated hillsides and arroyos, and riparian areas would not be affected by livestock grazing (BLM 1986; Sandoval 1982).

IN SUMMARY, under this alternative, wildlife would benefit from acreage closed to mineral material sales, fluid mineral leasing, increased AUMs reserved for wildlife, additional HMP development, elimination of grazing on key habitat areas, increased off-road vehicle limitation, watershed planning, and designation of 30 ACECs. Habitat degradation and loss would be eliminated or reduced on these areas.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Acquisition or disposal of land can cause varied impacts to cultural resources. Acquisition of lands which contain significant sites such as Fort Cummings and Los Tules would facilitate cultural resource goals. Under this alternative, some private land within the cultural ACECs would be acquired. At the Fort Cummings ACEC, acquisition of the private 40-acre portion of the Fort would facilitate the development of the fort as a recreation/interpretive site. Acquisition of the private 10-acre portion of the Los Tules site would enhance preservation efforts for the entire site area.

Conversely, disposal of sites would reduce site diversity in the Mimbres Resource Area.

National Register of Historic Places eligible cultural resources located within lands identified for disposal are mitigated through excavation and other methods. These mitigative efforts result in determinations of "no adverse effect through data recovery." However, these data recovery methods treat only portions of sites and some data is lost. In addition, modern excavation techniques will be considered primitive by future researchers.

Through ACEC designation, cultural resource sites and areas significant on a National level can be given special management attention to protect the

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cultural values. ACEC management prescription provide for phased implementation of protective actions.

Under this alternative, 30 areas would be designated as ACECs. Nine ACECs (Alamo Hueco Mountain, Apache Box, Cooke's Range, Dona Ana Mountains, Los Tules, Old Town, Rincon, San Diego Mountains, and Paleozoic Trackways) contain significant cultural or paleontological values, which would be protected.

Significant prehistoric rock art panels (petroglyphs) would be protected at the Dona Ana Mountain, Rincon, and San Diego Mountain ACECs. In the Alamo Hueco Mountains, rockshelters and open sites representative of the Archaic through Apache periods would be offered additional protection. Prehistoric rockshelter habitation sites would be protected within Apache Box. In Cooke's Range, Fort Cummings, historic mining camps, and prehistoric open sites would receive additional protection. The significant Mogollon pithouse village of Los Tules and the large Mimbres village of Old Town would be protected with ACEC designation. The proposed Paleozoic Trackways ACEC includes an internationally significant 280-million-year-old amphibian and reptile trackway site.

Under this alternative, the Butterfield Trail and associated stage station would be designated a Special Management Area resulting in specific management prescriptions for the preservation, protection, and public interpretation of the trail.

Closing or limiting off-road vehicle travel would reduce impacts to cultural resources within these areas.

Encouraging the use of existing right-of-way corridors and designation of avoidance areas would lessen impacts on cultural resources by concentrating major rights-of-way in specific areas. Excluding cultural ACECs from rights-of-way would result in reduced ground disturbances and visual intrusions to cultural resources within the ACECs.

The withdrawal from locatable mineral entry would result in additional protection of numerous cultural resources within the ACECs. For example, Apache Box ACEC is known to contain several

rockshelter habitation sites. Cooke's Peak ACEC contain the remains of historic mines, Archaic and Mogollon open sites, and perhaps Apachean period sites. The Florida and Organ/Franklin Mountains ACECs contain rockshelter habitation sites, historic mining sites, and Archaic and Mogollon open sites. The withdrawal from locatable mineral entry would prevent the possible disturbance of these sites from mining-related activities.

Mining activity usually results in increased access roads and, therefore, easier public access to cultural sites. Easier access to sites usually results in increased damage and vandalism to unprotected sites. Any degradation of cultural resources would result in irreversible and irretrievable losses of information.

The effects of vegetation use through livestock grazing are generally low-level, except where conditions combine to concentrate cattle. Proximity to water, certain types of forage, natural barriers, or fences can result in channeling cattle to result in intensive trampling of artifacts and features, and increased erosion of sites. Eliminating livestock grazing in sensitive areas would reduce these impacts.

Under this alternative, the Old Town Site, Fort Cummings, and the Dripping Springs Natural Area would be excluded from livestock grazing which would reduce cattle trampling of these sites. Class III cultural inventories would be conducted at Fort Cummings, San Diego Mountain, Pony Hills, and Rincon ACECs. These inventories would result in the location, identification, and description of archaeological sites which would allow for more intensive protection and management efforts at these sites.

Historic trails and roads within the Mimbres Resource Area such as the Camino Real, Santa Rita Copper Trail, Spanish exploration routes, and historic emigrant wagon roads would be researched and provide a basis for more intensive management and interpretation of these resources.

Historic mining towns and features at the Cooke, Jose, Stephenson-Bennett, Modoc, Tres Hermanas, Pyramids, Pino Altos, Peloncillos, Floridas, and Carlisle/Summit would be subjected to historic field and records research resulting in more

detailed knowledge of the historical significance of these sites. This additional research would lead to better interpretation of the sites to the general public.

Archaeological field schools would be initiated or continued at several sites including Old Town, Bruton Bead, Indian Basin, East Potrillo, South Florida, and Camp Cody. These field schools would help establish the significance and research potential of these sites and enhance BLM's abilities to properly manage these localities. This research would result in better communication with the public and greater interpretation of the resources to the public.

Public access to important rockshelter sites such as Apache Box would be restricted through the use of metal grates over some of the shelter openings. In addition, these sites would be subjected to increased patrols and monitoring which would provide greater security and protection.

An effort to acquire significant Butterfield Stage Station Sites would be initiated which could result in the protection, stabilization, and public interpretation of these important sites. Old Town and Pony Hills would be intensively managed in accordance with the provisions of the Mimbres Culture Study legislation, and the BLM portion of the Redrock Cemetery Site would be transferred to the National Park Service. These actions would result in reduced vandalism at the sites and enhanced public interpretation.

The Paleozoic Trackways Site would be intensively managed in accordance with the provisions of the Paleozoic Trackways Study legislation. This would result in greater protection and monitoring at the site and possibly the construction of an interpretive center. Environmental education would be stressed at the Center. In addition, paleontological surveys would be initiated in the Robledo Mountains, Aden Lava Flow, and Alamo Hueco Mountains. These surveys could result in the identification of new paleontological localities. This identification would result in new research at these sites and greater protection through monitoring and patrol. These discoveries would also enhance the BLM's public education efforts regarding paleontological resources in New Mexico.

Protection of riparian areas would reduce erosion of cultural sites. Riparian areas typically have high concentrations of historic and prehistoric sites.

IN SUMMARY, under this alternative, additional cultural resources located on State trust and private lands would come under BLM administration. Nine ACECs with cultural values would be designated resulting in implementable management prescriptions for these resources. Under Alternative B, most of the Mimbres Resource Area would be designated limited or closed to off-road vehicle use. Limited and closed designations would reduce public access to generally unprotected cultural resources and decrease damage and vandalism associated with easier public access. Encouraging the use of existing right-of-way corridors and designation of avoidance areas would reduce ground disturbances and visual intrusions to cultural resources. Excluding rights-of-way from cultural ACECs would result in reduced disturbances to cultural resources within the ACECs. Closing areas to locatable mineral entry would reduce the number of new access roads and result in decreased vandalism and damage to cultural resources in the closed areas. Reduction of soil erosion in high site density riparian areas would reduce erosion damage to the associated sites located in and near to riparian areas.

RECREATION

Disposal of isolated public land parcels would reduce the amount of public land in the Resource Area by 1.4 percent, although there would be a much smaller reduction in recreation opportunities in the Resource Area because much of the disposal acreage is currently inaccessible to recreationists. Disposal of the two areas that are currently designated as open to all vehicle use would effectively eliminate any opportunity for off-road vehicle recreation in these areas. Acquisition of State trust and private lands would increase public land acreage for recreation by 7.5 percent, and the acquired lands would be contiguous with other public land, enhancing recreation opportunities and quality on both the existing BLM and acquired lands by providing greater diversity of recreation opportunities and increased opportunity for dispersion of recreationists over wider areas.

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ACEC designations and expanded border vehicle closures would reduce land available for vehicle recreation by 110,790 acres respectively, or 4.7 percent as compared to existing open and undesignated areas. Additional vehicle designations would reduce opportunities for off-road vehicle recreation by 99.8 percent to only the existing 4,160 acres that are currently designated as open to all vehicle use, and those areas would eventually be disposed.

Development of foot access would enhance the public's ability to enjoy outdoor recreation in the Resource Area, particularly for dispersed, ambulatory types of recreation such as hunting, hiking, and birdwatching. Enhancement of these opportunities would be greatest where trail development would provide new opportunities for foot access into rugged portions of mountain ranges that have previously been inaccessible to most members of the public.

Primitive recreation opportunities within right-of-way avoidance and exclusion areas, areas closed to fluid leasing or open only with special stipulations and areas closed to locatable mineral entry and mineral sales would be enhanced by the maintenance of pristine conditions and the lack of disrupting activities that could degrade the natural quality of outdoor experiences on public land. Conversely, these land and mineral action restrictions would reduce the availability of new routes for vehicle recreation.

Vehicle recreation would be greatly enhanced by the development of new right-of-way routes, livestock developments, and exploration and development routes associated with leasable, salable, and locatable minerals. Under this alternative, where access development would be primarily for foot access, these commodity uses would provide the majority of new routes for vehicular access to and across public land. Because of avoidance and exclusion areas, new vehicular access related to rights-of-way would not occur in any of the proposed ACECs and would be unlikely in 1,134,570 acres of hills and mountains of the Resource Area. New vehicular recreation and access routes most likely would be established in the intermountain desert areas that cover most of the Resource Area, but do not provide the settings where most people enjoy big game

hunting, hiking, and other forms of dispersed recreation.

Interpretation of natural values in ACECs and cultural and paleontological values at other sites would add diversity to the recreation opportunities available within the Resource Area. Interpretive visits of Fort Cummings, the Paleozoic Trackway Site, Old Town, and Los Tules could increase to 40,000-100,000 per year. The addition of new interpretive sites would increase interpretive recreation potential within the Resource Area, while materials from sites such as the Paleozoic Trackways Site may be displayed in locally, regionally, and even internationally significant museums including the Carnegie Institute Museum of Natural History and the Smithsonian Institution. Management of certain sites for conservation would necessitate the exclusion or at least the dissuasion of public use from those sites to preserve the integrity of cultural or paleontological materials until scientific analysis can occur.

Wildlife habitat improvement within the guidelines of HMPs, along with game management by the New Mexico Department of Game and Fish could allow increases in game to sustain increased populations of deer, pronghorn, and small game for the enjoyment of hunters and non-consumptive wildlife enjoyment such as photography, and bird watching. Pronghorn habitat management in the Columbus, Cooke's Range/Nutt, Robledo Mountains, and Cedar Mountains would allow greatly expanded opportunities for pronghorn hunting in the Resource Area. Deer and small game hunting quality would improve in those areas as well as the Uvas Mountains and the West Potrillo Mountains.

Elimination of ibex from the Florida Mountains would decrease opportunities for big game hunting in the Resource Area by approximately 20 percent. This would have a significant effect on outdoor recreation opportunities not only in the Resource Area, but on a statewide, regional, and even National level, since public land in the Resource Area provides the only opportunities to hunt Persian ibex on public land in the United States.

Prescribed burning, elimination of grazing and establishment of instream flows in the Gila Middle

and Lower Box ACECs would all improve the quality of hunting in those areas. Furthermore, other recreation uses for which quality is enhanced by increased naturalness such as hiking and photography would benefit from these actions. Instream flow establishment would protect the warm water fisheries, as well as other types of riparian recreation in the Middle and Lower Boxes, which provide the vast majority of fishing opportunities in the Resource Area. The quality of other recreation opportunities in the Gila River canyon would also be protected by instream flows.

IN SUMMARY, land ownership adjustments under Alternative B would impact recreation opportunities in the Resource Area, primarily from consolidating public land and thereby improving access and reducing potential management conflicts. Vehicle designations combined with land disposal would eliminate off-road vehicle use opportunities, although vehicle use would be permitted on designated routes over 97 percent of the Resource Area. Development of foot access would improve hiking opportunities, primarily in the Organ Mountains. Right-of-way exclusion and avoidance areas and mineral closures would preserve the natural integrity and primitive recreation quality of most hilly and mountainous areas within the Resource Area. Wildlife habitat management would allow increase in hunting opportunities for pronghorn, deer, and small game while elimination of ibex would eliminate opportunities to hunt or photograph ibex on public land in the United States. Prescribed burning and elimination of grazing would both improve quality of primitive recreation opportunities such as hunting on portions of the Resource Area. Establishment of instream flows would ensure the maintenance of warm water fishing opportunities and other recreation qualities in the Gila Middle and Lower Boxes.

VISUAL RESOURCES

Under Alternative B, VRM could be impacted from the acquisition of State trust and private lands within Class I and II areas. Disposed lands would likely become urbanized, degrading any scenic quality on those lands, but no areas of high scenic quality would be disposed of and 33,055 fewer acres would be available for disposal and potential urbanization than under Alternative A. The acquired lands would be managed in

conformance with VRM guidelines that will prevent any uses of those acquired lands from altering the form, line, color, or texture of the natural landscape.

ACEC management prescriptions would constrain activities that could degrade scenic quality, including areas that would be managed as VRM Class I areas because of scenic ACEC designations.

Interim management guidelines associated with wilderness study of the Organ Needles, Gray Peak, Apache Box, and Pena Blanca areas would limit activities to conform with VRM Class II guidelines.

Vehicle closures would prevent degradation of visual resources by vehicle use, while vehicle limitations would limit the production of new impacts on visual resources from vehicle trails over a much greater area. No new areas would be subject to visual degradation by vehicle use.

Right-of-way avoidance and exclusion areas, and areas closed or open only with special stipulations for mineral sales, leasing, or location would have enhanced protection of visual quality.

Areas open to rights-of-way and mineral leasing, sale, and location would be mainly limited to VRM Class III and IV areas, and stipulations would be included to ensure conformance of any actions within these areas to the applicable VRM Class III or IV guidelines. Locatable minerals actions may cause degradation of scenic quality in some Class II areas.

Wildlife habitat, watershed, and fire management actions would allow improvement in vegetation resources that could alter the colors and textures of landscapes by enhancing the natural scenic quality of up to 1 million acres. Such actions could create contrasts in larger viewsheds within VRM guidelines, although changes would be gradual.

Instream flows would benefit the visual resources of the Gila River canyon, in which the riparian community provides integral color, textural, and structural components of the landscape. Protection of the riparian community through instream flow acquisition is essential to maintain many of the

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factors which enhance scenic qualities of the Gila Canyon.

IN SUMMARY, land ownership adjustments would impact visual resource management as lands in Class I and II areas are acquired, enhancing visual resource management of entire landscapes where current land ownership patterns preclude such management. Scenic ACECs, wilderness, and wild and scenic river studies would protect visual resources by precluding some management actions to protect the natural landscape. Vehicle closures and limitations would prevent new roads or off-road vehicle use from causing disturbances that could degrade scenic quality in the Resource Area. Visual resources would gain increased protection from right-of-way exclusion and avoidance areas and areas closed or limited by special stipulations for fluid mineral leasing, locatable mineral entry, or salable mineral development. Locatable mineral development is the only one of these actions likely to degrade scenic quality in Class II areas. Large scale vegetation management changes such as wildlife habitat management, fire management, watershed stabilization, and exclusion of livestock from critical soils would gradually create some contrasts in color of landscapes.

WILDERNESS

Acquisition of isolated State trust and private lands would improve manageability of most WSAs in the Resource Area and eventually any designated wilderness areas, particularly large areas such as the West Potrillo and Big Hatchet Mountains.

Wilderness study of the Apache Box, Gray Peak, Organ Needles, and Pena Blanca areas would add currently unrepresented ecosystems to the National Wilderness Preservation System including highly scenic areas, historic sites, and habitat for endangered species.

Wild or scenic river study of the Gila Lower Box unit would enhance wilderness qualities of the portion of the unit that overlaps with the Gila Lower Box WSA. Such a designation would elevate protection of a portion of the WSA pending wilderness designation. If the Lower Box is designated as both wilderness and a wild or

scenic river, the two designations would provide overlapping protection of the river corridor, enhancing the naturalness of the area.

Vehicle closures and limitations would protect areas proposed for wilderness study from degradation of naturalness by vehicle use.

Development of foot access in the Organ Needles and Pena Blanca areas would enhance opportunities for primitive and unconfined types of recreation including hiking, climbing, and photography. Such access would also enhance quality of existing primitive uses in the Organs by dispersing users over larger areas.

Data retrieval and research on cultural and paleontological sites in the Apache Box, Gray Peak, Organ Needles, and Pena Blanca areas would be constrained by the Interim Management Policy.

Implementation of wildlife HMPs would enhance wilderness values by improving habitat, maintaining or increasing wildlife populations and subsequent opportunities for activities such as hunting and wildlife photography.

Elimination of ibex would have significant beneficial impacts on wilderness values in the Florida Mountains because the ibex are a major exotic component that can not be expected to benefit the natural processes of the Florida Mountains ecosystem. Ibex may compete with other herbivores, cause vegetation trampling at a rate far exceeding that caused by native wildlife, and probably induce grazing pressure on plant species that do not naturally have predators in the ecosystem. Ibex likely provide abnormally high levels of food for predators and scavengers, altering the natural population levels of numerous species in the food web.

Watershed stabilization, fire management, elimination of livestock from sensitive or fragile soils, and acquisition of instream flows would all enhance wilderness qualities by stabilizing important natural ecosystem components. These actions would lead to improvement in naturalness and subsequent opportunities for primitive and unconfined types of recreation such as hunting, fishing, hiking, nature study, and photography.

IN SUMMARY, actions and activities would not be allowed in areas proposed for wilderness study that would impair wilderness values. Acquisition of State trust and private lands, wild and scenic river studies, vehicle closures and limitations, development of foot access, implementation of wildlife habitat management plans, watershed stabilization, elimination of ibex, fire management, elimination of livestock, and establishment of instream flows would all have significant beneficial impacts to wilderness resources and uses.

SPECIAL STATUS SPECIES (T&E)

Plants

Lands identified for disposal in the valley and on the mesa east and west of Las Cruces, where several of the isolated parcels are located could include potential habitat (sand dunes) for the sand prickly pear cactus because this is prime development land. An additional section of land near Berino, that is currently identified for disposal, would be added to the proposed Organ Mountains National Conservation Area designation to further protect this plant and its habitat. This parcel contains the largest known population of this species. A mitigation plan has also been developed for this species. A pad or stem from plants on land identified for disposal are transplanted to the new site to maintain the genetic pool. Night-blooming cereus, which is very hard to locate, and grows in creosotebush areas, could also suffer habitat loss. The retention of public land and the acquisition of private and State trust lands would protect special status plants and their habitat as well as bring additional potential habitat under Federal protection.

SMA's and ACECs especially in the Organ Mountains, would provide additional protection and management of all species and their habitat found in these areas. There are at least 24 potential Federal or State-listed species in the Organ Mountains area. The Sneed's pincushion cactus is found on the south end of the mountain range. Most of the ACECs have been identified for their biological values and several have identified special status plants such as *Atriplex griffithsii*, a saltbush identified on the Lordsburg Playa. Management plans balancing livestock,

wildlife and recreational use would provide long-term protection for these plants and their habitat. All areas would be either closed to vehicle use or limit the use to designated roads and trails which would keep plant theft and damage to the habitat from off-road vehicle use to a minimum. The proposal of four areas for wilderness study by the nature of the limited access and management policy, would add a measure of protection to special status plants and their habitat.

Limiting vehicles to designated roads and trails would limit potential plant theft which is a real problem with special status plants. Special status plant habitat would also be further protected from off-road vehicle use. Closed areas would provide long-term protection for plant species and their habitat.

Nonvehicular access routes could open up new areas to plant collection.

Designation of right-of-way corridors and exclusion/avoidance areas would prevent or keep habitat loss to a minimum in those areas.

Mineral actions, withdrawing or closing areas to mineral entry, would provide long-term protection to special status plants and their habitat. Areas open to leasing would follow the standard-procedures for these actions. Long-term loss would be mitigated by the reclamation stipulations but could still occur especially under mining notices (5 acres or less) where BLM has no discretionary authority, although the operator is still bound by Section 7 of the Endangered Species Act.

Developed recreation areas provide special protection measures for special status plants and their habitat in the area. These areas provide for interpretative and educational awareness of the biological values in the area. Visitors are limited to specific areas which protect the existing plants and their habitat. The Dripping Springs Natural Area and Aguirre Spring Recreation Area are good examples. Some potential habitat could be lost in these developed areas.

Watershed activity plan would provide for soil stabilization which would improve vegetation cover. These plans could indirectly protect existing species and their habitat and provide for future population.

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Vegetation sale areas would have a site-specific clearance done to ensure that no special status plants are affected. Brush control of creosotebush would not be done under this Alternative which would ensure long-term habitat protection for the night-blooming cereus. The elimination of livestock grazing could add some measure of protection to special status plants and their habitat.

Riparian and arroyo habitats have the majority of special status plants in the Resource Area. The exclusion of grazing, and the improved management on these areas would enhance and protect species and their habitat.

IN SUMMARY, land acquisition, ACECs, vehicle use limited to designated roads and trails, watershed management plans, and the elimination of livestock would provide additional short- and long-term benefits to special status plants by limiting use or avoiding an area all together and providing plant and habitat protection. Land disposal actions would have short- and long-term impacts from loss of potential habitat.

Animals

Improved manageability through acquisition and consolidation of lands would provide additional habitat for special status animals as well as provide a buffer around special status animal habitat. Sensitive species such as desert bighorn sheep and various raptors and reptiles would benefit from these acquisitions.

The designation of 30 ACECs would protect significant habitats for special status animal species such as desert bighorn sheep, Gila monster, peregrine falcon, spikedece, and loachminnow, because lands would be closed to mineral activity, right-of-way and off-road vehicle activities would be eliminated or restricted, livestock grazing would be eliminated or managed and lands would be acquired and retained. This habitat for special status animals under this Alternative is greater than that under Alternative A.

Proposal of four additional areas for wilderness study would help protect special status animal habitat from disturbance and degradation. The study areas would protect habitat for desert

bighorn sheep, reptiles such as the Gila monster, raptors, small birds and mammals, and two species of fish (spikedece and loachminnow).

Special management actions associated with the wild and scenic river study for the Gila River would help protect habitat for special status fish such as the spikedece and loachminnow (Hubbard 1985) as well as protect riparian habitat which supports for numerous special status raptors, small birds, and reptiles.

Closure of areas to off-road vehicle use which contain special status animal habitat such as the Gila Lower Box, Gila Middle Box, Apache Box, and Guadalupe Canyon would prevent habitat degradation and threatened and endangered animal disturbance. Limiting off-road vehicle use to designated roads and trails (2.9 million acres) would prevent special status animal habitat degradation and animal disturbance on large areas that are currently mostly undesignated. Use of designated roads and trails in areas with special status animals and habitat could result in habitat degradation and animal disturbance near these roads (Bury, et al. 1977), but this would be far less likely to occur compared to the present situation.

In areas open to fluid mineral leasing with special stipulation, special stipulation such as no surface occupancy and seasonal use restriction are used to mitigate impacts to special status animals such as the desert bighorn sheep.

Exploration and development of locatable minerals on areas less than 5 acres could result in site-specific habitat degradation and loss of special status animal populations (BLM 1986; Sandoval 1982) from access construction, site levelling, mining, and deposition of tailings. Activities on 5 acres or more require a plan of operation which would be analyzed in an environmental assessment to mitigate the effects of mining activity. Areas which contain significant special status species habitat which would be closed to locatable mineral entry include Apache Box, Guadalupe Canyon, and the Organ Mountains. These areas would not be subjected to habitat degradation and animal disturbance.

There are two existing Special Recreation Management Areas, the Organ Mountains and the

Gila Lower Box, which contain special status species habitat. Recreation activities in the Organ Mountain are mostly limited to existing and maintained trails and campgrounds. Limited hiking and camping occurs on some existing but unmaintained sites in the Organ Mountains and the Gila Lower Box. The remainder of the Resource Area is managed for dispersed recreation and is subject to unrestricted hiking and camping. These activities are of short duration usually occurring during hunting seasons. Special status species such as desert bighorn sheep and their habitat may be subjected to this short-term disturbance.

Continued implementation of the six existing HMPs will provide protection to special status species habitat, such as desert bighorn sheep, which occur in these areas. Activities which may occur in these areas are generally limited in their scope and extent by existing management guidelines.

Watershed planning on areas which have special status species habitat (Gila Lower Box and Big Hatchet Mountain) would enhance special status species habitat because activities such as grazing, mineral development, and recreation would be managed to reduce erosion and maintain or enhance the vegetation community and diversity.

Exclusion of grazing would prevent habitat disturbance for special status species such as desert bighorn sheep because competition for forage and cover with livestock and habitat degradation from range developments would not occur (BLM 1986; Sandoval 1982).

Secured instream flows in the Gila River would protect special status species habitat (loachminnow and spikedace) (Hubbard, et al. 1985) and enhance riparian habitats which support several special status species birds and reptiles.

IN SUMMARY, under this alternative special status species would benefit from habitat protection and enhancement and less animal disturbances resulting from increased land acquisition and ACEC designation, Wild and Scenic River designation for the Gila River, increased off-road vehicle restriction, increased mineral withdrawals, watershed planning and elimination of grazing from key habitat areas.

RIPARIAN AND ARROYO HABITATS

Improved manageability by acquiring and blocking up lands which contain riparian and arroyo habitats would protect and enhance their values. Activities associated with grazing, mining, and recreation would be managed to provide the least amount of disturbance to the area.

Development of management prescriptions for 30 ACECs would result in acquisition and retention of lands; closure of land to mineral material sales and fluid mineral leasing; closure of land to locatable mineral entry in Apache Box, Guadalupe Canyon, and the Organ/Franklin Mountains; restrictions on off-road vehicle and right-of-way activities; and elimination or management of livestock grazing. These actions would protect and enhance riparian and arroyo habitats in these areas.

Special management actions to protect values associated with the wild and scenic river study for the Gila River would help protect and enhance the riparian values on public land along the river. All activities which would impair wild and scenic river qualities would be limited in scope and extent.

Areas closed to off-road vehicle use which contain riparian and arroyo habitat areas would not be subjected to activities which would degrade riparian and arroyo habitat. Riparian and arroyo habitats which occur in areas limited to designated or existing roads and trails would be subjected to limited disturbance wherever an existing road or trail crossed one of these areas. However, most off-road vehicle use on these roads and trails would not affect riparian and arroyo habitat areas. Continued use of areas currently designated as an off-road vehicle open area would affect arroyo habitats in these areas because use of these habitats would continue to degrade the arroyo channels and vegetation and would not be allowed to recover from past use.

Right-of-way avoidance areas would not affect, or have limited effects on, riparian and arroyo habitat areas. If a right-of-way is needed through these areas then special stipulations would be required to minimize degradation of these areas. Right-of-

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way exclusion areas would not be subjected to degradation of riparian and arroyo habitat areas from activities which occur in the installation of utilities within right-of-way corridors.

Within areas open to fluid mineral leasing, there are numerous seeps, springs, and arroyo habitats. Activities associated with the exploration and development of fluid mineral leasing such as access construction, site levelling, drilling, and utility construction could affect riparian and arroyo habitats by destroying vegetation and disturbing arroyo channels and sides. Currently approximately 3 acres per year are affected by fluid mineral leasing activities. Areas closed to fluid mineral leasing which contain riparian and arroyo habitat would not be affected by activities associated with fluid mineral leasing. Site-specific stipulations for fluid mineral leasing acres would limit disturbance to riparian and arroyo habitat areas.

Exploration and development of locatable minerals on areas less than 5 acres could result in site-specific habitat degradation from access construction, site levelling, mining, and deposition of tailings. Activities on 5 acres or more require a plan of operation which would be analyzed in an Environmental Assessment to mitigate the effects of mining activity. Several areas that would be withdrawn from locatable mineral entry contain important riparian areas. These areas are Apache Box, Guadalupe Canyon, and the Organ Mountains. Activities associated with the exploration and development of locatable minerals would not occur, and there would not be any impacts to riparian and arroyo habitats.

Mineral sales which occur in arroyo habitat areas would affect these areas because activities such as construction of access, material removal, and mineral storage would remove vegetation, disturb stream bank and arroyo stabilization, and alter flow of water down the arroyo. Areas closed to mineral material sales would not be subjected to mineral material sales activities which would degrade arroyo habitats in these areas.

Management of the two existing Special Recreation Management Areas (Organ Mountains, Gila Lower Box), would continue while the remainder of the Resource Area is managed for dispersed recreation. Recreation activities (hiking,

camping) which could affect riparian and arroyo habitat within the Organ Mountains are limited to designated and maintained trails and campgrounds at Dripping Springs Natural Area and Aguirre Spring Recreation Area. Recreational activities (hiking, camping) which occur at the Gila Lower Box are usually limited to established, undesignated, unmaintained trails and camping areas. The Gila Lower Box is subject to unrestricted hiking and camping, and riparian and arroyo habitat degradation, such as erosion and vegetation loss, may occur where use is concentrated. However, these activities tend to be of short duration (several days a year).

The continued implementation of six existing HMPs and the development of six additional HMPs would provide protection to the riparian and arroyo habitat resource in these areas because activities which may occur would be limited in scope and extent.

Watershed planning would enhance and protect riparian and arroyo habitat resources within these areas. Watershed planning would prevent vegetation ground cover loss, stream bank and arroyo disturbance would be minimized, and erosion would be reduced. Activities such as grazing management, erosion control projects, mineral exploration and development, and recreation would be managed to mitigate disturbance to the resource.

Grazing would be excluded from significant riparian areas such as the Gila Lower Box. Riparian and arroyo habitats within these areas would not be impacted by livestock grazing. Erosion, stream bank and arroyo habitat channel disturbance may be reduced through increased ground cover (Elmore and Beschta 1987; Ames 1977). Intensive grazing use causing vegetation depletion in riparian and arroyo habitat areas would not occur.

Secured instream flows for the Gila River would enhance and protect riparian vegetation communities and stabilize stream banks which reduces the impacts of flooding by slowing down water flows which increase sediment deposition and percolation of water into the ground.

IN SUMMARY, under this alternative riparian and arroyo habitats would benefit from additional

ACEC designations, wild and scenic river studies, increased acreage withdrawn from mining and grazing activities, increased acreage with off-road vehicle restrictions and wildlife HMP development. Stream bank and arroyo channel degradation would not occur and riparian and arroyo vegetation would not be degraded.

SOCIAL AND ECONOMIC CONDITIONS

Under Alternative B, land ownership adjustments would improve management of public land by consolidation or disposal of isolated parcels and to acquire lands in WSAs, SMAs, and ACECs which are not presently in Federal ownership. The lands near Las Cruces, on the East Mesa, would be retained with the exception of isolated parcels that are less than one section (640 acres) in size. Split-estate land (Federal mineral ownership and private surface ownership) would be disposed of, especially where there are conflicts on the East Mesa. All land contiguous with U. S. Forest Service land would be retained, regardless of parcel size.

Disposal of approximately 2,000 acres of land on the East Mesa would increase the property tax base in Dona Ana County by \$500,000. This would result in the loss of \$1,500 in PILT (payment-in-lieu-of taxes) and an increase of property tax receipts by \$28,128 for a net increase of \$26,628. A total of 40,090 acres would be disposed of in the remainder of the Resource Area. This would result in a loss of \$30,068 in PILT, and an increase of \$18,745 in taxes for a net loss of \$11,323 in receipts to local government. The net effect of all land disposal transactions would be an increase of \$15,307 in receipts to local governments.

Land acquisitions would consist of State trust and private lands located in SMAs, WSAs, and ACECs. They are valued at \$65 per acre, as unimproved rangeland. This would result in a loss of \$35,762 in property tax receipts, and an increase of \$170,228 in PILT, for a net increase of \$134,465 in local government tax receipts. The net effect of land disposal and acquisition would be an increase in local government receipts of \$149,772.

Under Alternative B, land disposal would not provide land for urban expansion in the Las Cruces area and the Rio Grande Corridor. The effect of this would be to concentrate population growth in agricultural valley land. A loss of agricultural base would occur as land is developed for residential and commercial purposes. Conflicts would arise between established agricultural practices, such as aerial spraying and residential developments.

Livestock grazing would continue on 63,000 acres of land on the East Mesa. There would be 338 AUs of grazing on this land producing an annual gross income of \$96,000 on eight grazing allotments.

ACEC designations, wilderness, and wild and scenic river study proposals would protect a large portion of the biologically, scenic, and culturally significant areas in the Resource Area. Appreciation of natural and cultural history would be promoted. Dispersed recreation, wildlife, and visual resources would be enhanced. There would be benefits for air quality and watershed stability. There would be economic benefits to local communities as a result of increased tourism. Some resource conflicts would arise with the proposed Hooker Dam, and with grazing, minerals, and developed recreation.

There would be vehicular use designations in all areas under Alternative B. Vehicular damage to soils, vegetation and watershed would be minimized by these designations. Existing users and permittees would be largely confined to the existing access routes. There would be some conflicts with activities such as mineral exploration, and off-road vehicle recreation.

Access would be acquired through the planned land ownership adjustments, or through plan amendments on a case-by-case basis. Alternative B would emphasize use of existing roads where they exist, and emphasize pedestrian, non-vehicular access elsewhere. This would maintain the wilderness character that exists in the roadless portions of the Resource Area. Wildlife, vegetation, soil and watersheds would be protected from disturbance incidental to off-road vehicles based recreation and other traffic.

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New rights-of-way would be encouraged to me existing corridors and sites. There would be areas designated for right-of-way exclusion and right-of-way avoidance. The remaining area would be designated for right-of-way use under standard stipulations. This is more restrictive than the present requirements and would minimize the number of access routes needed to service rights-of-way and reduce construction and maintenance costs. Visual quality, soil, vegetation, and watersheds would be protected. Some conflicts may develop between users of right-of-way corridors, although conflicts between other resources and right-of-way users would be minimized. The location of right-of-way corridors has an impact on the real estate values of lands which may be served or crossed by rights-of-way. Proposed land tenure ownership adjustments may resolve some of these issues by altering the spatial pattern of private and public lands. The location of right-of-way corridors may also have an impact on property values through alterations in the visual quality of the land. These would be significant to land with the potential for residential development.

Areas closed to fluid mineral leasing amount to 8 percent of the Resource Area acreage. Much of this area is located in mountainous igneous geological regions, which have a low potential for oil and gas fields. However, some of these areas have good potential for geothermal production. The closures are expected to have a small effect on the utilization of geothermal resources, since the remote location of the closed areas would discourage geothermal development.

Areas closed to mineral materials disposal would include all of the ACECs, and Community Pit 1 would be closed to prevent disturbance to the Paleozoic Trackways ACEC. Since the cost of hauling sand and gravel represents a considerable portion of the cost, the most attractive sites for mineral materials are located near the points of use. Closing the ACECs to mineral materials development should not have an adverse affect because most of the ACECs are located in mountainous and inaccessible areas. Retention of public land on the East and West Mesas would allow development of mineral materials in sites of known potential which are located near the potential location of use.

Public attitudes concerning minerals policy are determined by perceptions and interests. Persons who have an economic interest in the minerals industry are likely to be opposed to any sort of restrictions on exploration or development. The livestock industry would support these restrictions on exploration and development, and have concerns over reclamation and rehabilitation of disturbed areas. Many of the public have expressed the belief that the 1872 mining law is an outdated "giveaway" and should be replaced by legislation that requires greater control over mining activities as well as the establishment of fees and royalties produced from the exploitation of mineral resources. Conservationists would support the relatively large acreage proposed for mining restrictions under this Alternative.

The Organ Mountains and Gila Lower Box would be Special Recreation Management Areas in Alternative B. A parking area and primitive recreation site would be developed at the Gila Lower Box SRMA, while the Organ Mountains SRMA would have the present recreational facilities. The facilities in the Organ Mountains would receive approximately 100,000 to 110,000 visitor days annually. This rate of visitation would generate approximately \$75,000 in fees (BLM Recreation Staff 1991) and another \$531,000 in revenue for the local economy. The Gila Lower Box special resource management area would be expected to draw approximately 10,000 to 20,000 visitors annually, and contribute \$150,000 to \$300,000 to the local economy. The remainder of the ACECs would emphasize dispersed and primitive recreational opportunities. Public attitudes toward recreational opportunity are shaped by their economic status, age, and education. In general, older persons and families with young children prefer developed recreation areas. Primitive and wilderness recreation is preferred by persons under 35, with at least some college education. Day-use areas within 1-hours time of urban areas are in great demand because of the effects of inflation and two wage-earner families on disposable income and vacation time (New Mexico Natural Resources Department 1986). Demand for recreational facilities is expected to increase with the population. The demographic trends in the Resource Area are toward an older population which would desire more developed recreation sites; while the relatively low personal

incomes in the Resource Area increase the importance of sites located near urban areas.

Cultural resources would receive a high level of protection under Alternative B. There would be 11 ACECs with significant cultural or paleontological values. There would be five interpretive areas: Cooke's Range, Kilbourne Hole, Old Town, Paleozoic Trackways, and Rincon ACECs. Four of these sites have National or regional significance and could be expected to attract visitors who are interested in cultural resources. There would be an estimated 40,000 to 100,000 visits to these sites annually producing a contribution of \$200,000 to \$500,000 to the local economy. The development of these interpretive sites would be expected to increase knowledge and appreciation of cultural resources in the Mimbres Resource Area.

There would be major emphasis on wildlife habitat improvement under Alternative B. There would be six additional HMPs for deer, pronghorn antelope, and quail. Emphasis would be on the maintenance of native wildlife species. The Persian ibex would be removed from the Florida Mountains, to be followed by the reintroduction of desert bighorn sheep. Increases in deer populations under this alternative would lead to an estimated 8 percent increase in hunter days which would contribute an additional \$62,244 to local economies.

There would be grazing exclusion on 201,470 acres under Alternative B which would cause a loss of 29,407 AUMs, or 2,451 AUs. This would result in an annual loss of \$695,966 in gross receipts, and \$57,932 in grazing fees to the BLM. This would be a reduction of 8 percent in the stocking rate for the public land in the Resource Area, or a 3 percent reduction in the total number of beef cattle in the resource area (Gore and Hand 1989). The economic effects of these reductions would vary by location, and by permittee. Reductions of livestock grazing would only cause a small economic effect in Dona Ana County because of the small contribution of livestock grazing in the total economy. In counties where livestock grazing forms a larger portion of the economic base, the impact of grazing exclusions could be more significant. There would be hardship imposed on individual ranchers including possible bankruptcy and unemployment. The level of hardship would depend on the mix of land ownership in the grazing allotment. In southwest New Mexico, the

"typical" ranch obtains 20 percent of its forage from privately-owned land, 21 percent from State leases, and 59 percent from BLM leases (Torrel, et al. 1985-1989). Simulations using ranch budgets from 1987 (a year of moderate prices and good range) and 1989 (a year of high prices and poor range) indicate that 30 percent loss in BLM forage would result the loss of all ranch net profits. A complete loss of BLM grazing would cause cash costs to exceed gross receipts. The ranchers would be presented with the options of finding outside employment, or of selling the ranch, and would possibly be forced to move out of the area. Reductions in the grazing preference would result in a capital loss to the ranchers. Leased public grazing land has a value of 20 percent to 33 percent of privately-owned land (Torrel, et al. 1985-1989). This economic impact could be expected to produce an extreme amount of conflict between the ranchers being affected and the BLM. Hunters, recreationists and others could be expected to favor grazing reductions because of the associated increases in wildlife populations, the improvement in visual quality, and reduction of soil erosion. Deer, pronghorn antelope, and desert bighorn sheep populations would be expected to increase because of the increased availability of forage. A marginal increase of hunter days would be expected as a result. The increases in wildlife populations as a result of forage allocation is difficult to predict because competition between game animals and livestock depends on many factors including range condition, degree of dietary overlap, and the status of other habitat factors. The economic effect of improved watersheds and increased biodiversity is hard to assess because their impact is diffused and not always measured in dollars.

Alternative B would emphasize vegetation treatments using grazing management and prescribed burning to control brush. Any resulting increases in forage would be allocated to wildlife or watershed. Treatments would be limited to areas where there are enough fine fuels to support fire. The cost per section of this type of treatment would be \$12,800. The treatment would produce an annual increase of 56 AUMs per section given 30 percent utilization by livestock. An additional 48 AUMs of forage would be available for wildlife. This would result in an increase of 161 hunter days per section over the 20-year life of the treatment. The net result from the increased

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forage production would be approximately \$26,000 for the life of the project assuming that no maintenance is required for the treatment, that forage production remains constant for the life of the treatment, and that other economic factors of production remain constant.

Under Alternative B, watershed management plans would be developed for eight critical watersheds in the Mimbres Resource Area. The implementation of these plans may require modifications in grazing plans and stricter control over surface-disturbing activities. This may cause some increase in costs to some permittees. The reduction of soil loss and sedimentation could be expected to benefit water users, riparian areas, and stream flow.

There would be six riparian ACECs under Alternative B. These areas would protect the significant biological and scenic resources found in riparian habitats. There could be some conflicts with grazing and other surface disturbing activities as a result of these designations.

There would be 11 ACECs protecting special status species under Alternative B. The emphasis would be on habitat preservation and protecting special status species from disturbing activities. This program would protect the species in their natural habitat and provide opportunities for scientific study and public enjoyment. Some conflicts may arise with grazing permittees and mineral interests over ACEC prescriptions protecting special species.

IN SUMMARY, Alternative B is designed to protect natural values such as biodiversity, scenic areas, and significant habitats. While this would not eliminate significant economic activity in the Mimbres Resource Area, it would protect the most sensitive ecological areas from disturbance.

Land ownership transfers to private ownership would be minimized. Approximately 2,000 acres of land in Dona Ana County would be designated for disposal. The remainder would consist of isolated tracts in Luna and Grant Counties. This would affect land use patterns by limiting urban expansion to existing private land. The result would be to concentrate growth to valley land and to increase development pressure on farmland.

The property tax base would be increased by approximately \$500,000 in Dona Ana County, and tax receipts would increase by approximately \$27,000. PILT payments in Luna, Hidalgo, and Grant Counties would decrease by \$30,000 due to disposal but would increase by approximately \$135,000 as a result of land acquisitions.

There would be 30 ACECs under Alternative B. Grazing elimination on 201,470 acres in eight ACECs would protect sensitive watershed and wildlife habitat. Four additional areas for wilderness study on 34,480 acres would be added to the 14 existing WSAs. Livestock grazing elimination in ACECs would result in the loss of \$696,000 in livestock gross receipts including \$58,000 in BLM grazing fees.

Fluid minerals exploration closures would be in effect on 19 percent of land in the Resource Area, 5 percent would be closed to locatable minerals entry, and 14 percent would be closed to mineral materials disposal. These actions would not be expected to have a significant input on the minerals industry.

Off-road vehicle use designations would cover 100 percent of the Resource Area. Resource conflicts would be reduced, however, constraints would also be added to permittees and existing users causing conflicts with some activities such as grazing, mining, and off-road vehicle recreation.

Recreation and cultural interpretive facilities would accommodate 325,000 visitor days and generate an estimated \$1,625,000 in gross receipts.

Increases in hunting would provide an estimated \$62,244 in gross receipts to local economies.

Direct economic benefits from livestock, minerals, and land development would be reduced to provide indirect benefits to watershed, wildlife, scenic values, and wilderness under Alternative B. While direct economic benefits are easily measured, there is no universally accepted method to estimate economic benefits from amenity values such as scenery and wildlife. The decision to emphasize particular resource uses is not always based on strict economic criteria, and must also consider social benefits.

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MINERALS

Fluid Leasable Minerals

OIL AND GAS

The land identified for disposal has low potential for the occurrence and development of oil and gas. Consequently, the loss of these fluid minerals from public ownership would be insignificant.

Land identified for the acquisition of vehicular access and land adjacent to these areas has low potential for the occurrence and development of oil and gas. Consequently, the new opportunities for mineral exploration on this land would be insignificant.

Table 4-13 lists the acreage of public land that would be available for oil and gas development in comparison to the oil and gas potential.

GEOTHERMAL

Land identified for disposal in the Las Cruces area contains 16,000 acres of high geothermal potential and 19,000 acres of moderate geothermal potential. This represents about 27 percent of the total high potential lands and 7 percent of the moderate potential lands. The transfer of these lands out of Federal ownership would preclude the opportunity for Federal leasing and development of these resources. Retaining the mineral estate in Federal ownership could lead to potential split-estate conflicts if the surface owner does not concur with geothermal development. However, low-temperature, direct-use geothermal applications such as space heating and domestic hot water heating would probably be compatible with surface uses.

Table 4-14 lists the acreage of public land that would be available for geothermal development

compared to the potential for geothermal resources.

Nonenergy Leasable Minerals

The land identified for disposal has low potential for the occurrence and development of non-energy leasable minerals so the loss of these resources from public ownership would be insignificant.

Table 4-15 lists the acreage of public land that would be available for non-energy leasable mineral development compared to the potential for these resources.

Locatable Minerals

Most of the land identified for disposal has low potential for the occurrence of locatable minerals. There are 2,700 acres of high potential land in the Silver City area and 2,600 acres west of the southern San Andres Mountains that are identified for disposal. However, legal access to the areas near Silver City is limited, so the loss of the public's opportunity for mining would not be significant. The loss of the area near the San Andres Mountains would be more significant because the public currently has good legal access. If the mineral estate is reserved to the United States, there could be conflicts between the surface owner and the mining claimants concerning surface damages.

Land identified for the acquisition of vehicular access and land adjacent to these areas have low potential for locatable minerals. Consequently, there would be low impacts related to the new opportunities for mineral exploration on these lands.

Table 4-16 lists the acreage of Federal land that would be available for locatable mineral development in comparison to locatable mineral potential.

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TABLE 4-13
AVAILABILITY OF LAND FOR OIL AND GAS DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
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	<u>POTENTIAL FOR OCCURRENCE</u>			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	2,115,700	1,678,300	0	3,794,000
Open/Stipulations	180,000	122,000	0	302,000
Open/No Surface Occupancy	38,600	3,700	0	42,300
Not Open to Leasing	0	0	0	0
Nondiscretionary Closure (withdrawals)	168,500	408,900	0	577,400
Total	2,502,800	2,212,900	0	4,715,700

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-14
AVAILABILITY OF LAND FOR GEOTHERMAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
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	<u>POTENTIAL FOR OCCURRENCE</u>			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	3,489,700	214,800	56,700	3,761,200
Open/Stipulations	264,000	38,000	0	302,000
Open/No Surface Occupancy	41,700	600	0	42,300
Not Open to Leasing	0	0	0	0
Nondiscretionary Closure (withdrawals)	574,700	0	2,700	577,400
Total	2,370,100	253,400	59,400	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-15
 AVAILABILITY OF LAND FOR NONENERGY LEASABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
 (ACRES OF FEDERAL MINERAL ESTATE)*
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	<u>POTENTIAL FOR OCCURRENCE</u>			
	LOW	MODERATE	HIGH	TOTAL
Open/Standard Lease Terms and Conditions	3,745,800	15,400	0	3,761,200
Open/Stipulations	302,000	0	0	302,000
Open/No Surface Occupancy	41,800	500	0	42,300
Not Open to Leasing	0	0	0	0
Nondiscretionary Closure (withdrawals)	577,400	0	0	577,400
Total	4,667,000	15,900	0	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-16
 AVAILABILITY OF LAND FOR LOCATABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
 (ACRES OF FEDERAL MINERAL ESTATE)*
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	<u>POTENTIAL FOR OCCURRENCE</u>			
	LOW	MODERATE	HIGH	TOTAL
Open	3,718,200	283,400	48,600	4,050,200
Closed	0	0	0	0
Nondiscretionary Closure (withdrawals)	599,000	30,200	3,500	632,700
Total	4,317,200	313,600	52,100	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

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Salable Minerals

About 25,000 acres of land proposed for disposal are located in the Las Cruces area and have high potential for the development of sand and gravel. This represents about 53 percent of the high potential sand and gravel between Las Cruces and Anthony. If these lands are unavailable for mineral development, there could be significant impacts on the local economy. Sand and gravel are essential in the construction industries associated with the continued growth of an area. Retaining the salable minerals in Federal ownership would not resolve this problem. Potential conflicts that would arise from the split ownership of the surface estate and mineral estate in an area of city expansion would probably prevent the extraction of sand and gravel.

Table 4-17 lists the acreage of public land that would be available for salable mineral development in comparison to salable mineral potential.

IN SUMMARY, land identified for disposal has low potential for the occurrence and development of oil and gas, so the loss of this mineral resource from public ownership would be insignificant.

Land identified for disposal near Las Cruces has moderate to high potential for geothermal resources. The loss of this mineral resource from public ownership would preclude the opportunity for leasing and development. If the geothermal estate is retained in Federal ownership, development of the geothermal resources could lead to conflicts between the surface owner and the geothermal lessee. However, geothermal development can be compatible with surface uses.

Disposal of land near Las Cruces that has high potential for the development of sand and gravel would preclude the development of this mineral resource. Retaining the salable minerals in Federal ownership would lead to potential split-estate conflicts because mining of mineral materials is not compatible with surface use.

TABLE 4-17
AVAILABILITY OF LAND FOR SALABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
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	POTENTIAL FOR OCCURRENCE			
	LOW	MODERATE	HIGH	TOTAL
Open	3,459,600	99,900	59,700	3,719,200
Closed	120,000	3,900	600	124,500
Nondiscretionary Closure (withdrawals)	836,600	0	2,600	839,200
Total	4,416,200	203,800	62,900	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

LANDS

The 232,710 acres of public land identified for disposal under this alternative consists of isolated parcels and small tracts located in Luna, Hidalgo, and Grant counties and lands located in Dona Ana County identified for disposal in the Southern Rio Grande Plan Amendment and new parcels identified for disposal near La Union, New Mexico. BLM would be able to dispose of difficult to manage public land in Grant and Luna counties that could provide numerous opportunities (i.e., agricultural, residential) for the public and provide high valued land near Las Cruces (Dona Ana County) for the potential growth of the city.

BLM would pursue the acquisition of approximately 56,050 acres of State trust land and 37,480 acres of private land. These acquisition areas would be inholdings within existing and proposed ACECs. Consolidation of the public land would significantly improve management efficiency, effectiveness, and costs while improving BLM's ability to manage wildlife habitat, recreation, cultural resources, and other resource programs.

The multiple-use management of approximately 2,821,110 acres of public land would allow BLM to carry out multiple-use management on these lands as well as authorize multiple use actions providing opportunities for companies and individuals to use the public land.

Legal vehicular access to certain public land would enable some applicants to locate site rights-of-way easier and coordinate with only one landowner. Administrative or legal access across private land to public land creates better management conditions for the BLM.

Approximately 84,950 acres of exclusion area would be created which would prohibit the issuance of new right-of-way grants except where existing right-of-way corridors occur. Approximately 303,480 acres would be identified as avoidance areas which would restrict construction and maintenance activities as well as the size and type of actions to be authorized. These designations could make right-of-way construction more difficult and expensive for utility companies. Utility routes may deviate more

and therefore require longer rights-of-way, thus increasing the amount of surface disturbance. However, areas open for right-of-way development would be easier to identify. (See Glossary for definitions of right-of-way exclusion areas and right-of-way avoidance areas.)

IN SUMMARY, land ownership adjustments would occur on approximately 8 percent of the public land within the Resource Area. Approximately 93,530 acres of State trust and private inholdings within ACECs would be acquired to improve manageability. Approximately 2,821,110 acres of public land would be managed for multiple-use under BLM administration and open to all applicable public land laws which would provide opportunities for public use. Right-of-way placement would be excluded from 84,950 acres of public land, except in existing right-of-way corridors, and would be restricted on an additional 303,480 acres. Right-of-way exclusion and avoidance areas could present longer routes and more expense for right-of-way applicants. However, areas open for right-of-way development would be easier to identify.

ACCESS

Under Alternative C, access could be lost to 232,710 acres of public land in Dona Ana, Luna, Grant, and Hidalgo Counties through disposal, but this would not significantly affect access to other public land since many of these parcels are small, isolated tracts that are not generally used to access other public land. Many of these parcels have no existing legal access to them and some are behind locked gates on adjacent private land where they are not currently available for use by anyone but the grazing permittee. Reservation of easements upon disposal of this land could be used to maintain any existing access to Forest Service, State trust, private, or adjacent public lands in the Organ Mountains, Franklin Mountains, Uvas Valley, Little Burro Mountains, and lands north and south of Interstate 10 between Deming and Lordsburg. Major access routes such as county roads on disposed lands would continue to provide access to adjacent public land.

Acquisition of State trust and private lands would allow BLM to improve access to and across public land, particularly in 29 ACECs. Accessibility of public land would be improved by achieving better

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uniformity of land ownership in the public land, and reducing land ownership boundaries in those areas that receive the highest levels of public use, including most of the mountain ranges from the Organ Mountains to the Arizona border, and the Gila Lower Box. Acquisition of the Spring Canyon, Rockhound, Leasburg, Fort Selden, City of Rocks, and Pancho Villa State Parks would enhance legal public access to surrounding public land.

Vehicle closures would curtail vehicular access on 54,900 acres of land along the Mexican border. An additional 155,400 acres in Special Management Areas would be designated as limited to designated roads and trails, restricting vehicular access within these areas to existing roads except those that may be causing degradation of the resources for which those special management areas are designated. Access within two new open areas totalling 16,190 acres would be unrestricted, enhancing vehicular access to lands within and adjacent to the Aden Hills and the Lordsburg South Playa. Access on the remaining 2,861,030 acres within the Resource Area would be maintained.

Designation of four new wilderness study or wilderness areas would not significantly hinder access to and across public land, although 1.5 miles of road and 5.3 miles of vehicle ways would be closed within the 37,485 acres of proposed wilderness study areas.

Development of new foot and vehicle access routes would be conducted through road construction and easement acquisition across State trust and private lands. Legal, vehicular, and foot access would be significantly improved to the Alamo Hueco, Big Hatchet, Burro, Cedar, Cooke's, Florida, Goodsight, Little Hatchet, Organ, Peloncillo, Pyramid, Robledo, Tres Hermanas, Sierra Rica, and West Potrillo Mountains plus Apache Box, the Apache Hills, Bear Creek, the Coyote Hills, Blue Creek, Community Pit #1, the Gila Lower and Middle Boxes, the Sleeping Lady and Rough and Ready Hills, and the San Simon Cienega. Access route development and acquisition would improve the existing network of public land access routes to provide the public with sufficient opportunity to enjoy the full spectrum of public land uses.

Vehicular access would be impacted from designation of areas as open to rights-of-way, fluid mineral leasing, locatable mineral entry, and salable mineral development although fewer opportunities for development of access would be available as a result of these activities under this alternative than under Alternative A.

IN SUMMARY, disposal of isolated parcels of public land would not significantly deter access to and across public land, while acquisition of non-Federal inholdings would enhance legal and foot access to and across Special Management Areas throughout the Resource Area. Vehicle closures would limit vehicular access to designated roads and trails within 27 ACECs, and some access routes within these areas would likely be closed to protect sensitive resources. Vehicle closure would end vehicular access within 1 mile of the Mexican border in Dona Ana and Luna Counties. Vehicle limitations would limit vehicular access to existing roads and trails over most of the Resource Area, but development of access routes including easement acquisition and road construction would enhance opportunities to access most blocked public land areas. Commodity development would enhance vehicular access over 2,665,390 acres within the Resource Area.

LIVESTOCK GRAZING

The disposal of public land through sale or exchange could have a long-term impact on grazing if these lands were eventually developed and fenced out of an allotment. Most affected allotments (Section 15 leases) contain small isolated parcels of public land. If disposed of, most of these allotments would no longer contain any public land. A total of 111 allotments encompassing up to 31,890 AUs could be affected (see Table 4-12). The owner of any permanent range improvements would be compensated for the adjusted value of their interest in these range improvements. Range improvements on the disposal land would be included in the selling price. If these were exchanged to the permittee, grazing would remain the same, but if the land was sold to another interest, grazing use could be lost or grazing patterns substantially changed. There is always an opportunity for a lease agreement between the grazing permittee and landowner granting control of the base property

and livestock. Grazing AUs could be reduced if no agreement was reached and the percent federal range would change accordingly. The multiple-use management of 2,821,110 acres of public land would allow, with proper multiple-use management, continued livestock grazing on the public land. The acquisition of State trust and private lands would block up the public land. Developing and managing grazing activity plans would be easier.

Designation of ACECS could impact livestock grazing in those areas. Most of these areas have significant biological or other resource values. Parts of some of the ACECs could be fenced out to protect these values from grazing use. Grazing patterns would change but for the most part AUs should remain the same. The elimination of livestock grazing would continue on five allotments with no new loss of AUs. Grazing activity plans would be developed to minimize conflicts between recreational activities and livestock use. ACECs which require these plans would provide long-term benefits to grazing by improving distribution patterns and allowing rest for forage species. Vehicle use would be limited to designated roads and trails which could have an impact on grazing practices by limiting human and livestock interactions. The proposal of four areas for wilderness study, included in 14 allotments, would require compliance with interim management requirements. Range improvement maintenance and development would be more costly, difficult and time consuming. The monitoring of livestock movements, salting, and supplementing would also be more difficult. The development and implementation of grazing activity plans, could mitigate most of the impacts to livestock management.

Intensive vehicle use would be expanded to 16,190 acres in two new areas. The four allotments which contain these new areas would have more problems with vandalism and livestock harassment. The allotments are: Walters (No. 01028); Lunt (No. 01034); Aden Hills (No. 03001); and Corralitos (No. 03013). Having specific areas for intensive vehicle use, should limit the problems in the rest of the Resource Area. Limiting vehicle use to existing roads and trails would limit livestock and human interaction. Because most roads or trails lead to developed improvements, vandalism except during the hunting season would

remain about the same. The closed vehicle use designation could create problems in range improvement maintenance and development but would also reduce potential problems between livestock and humans. Monitoring of livestock movement and other activities associated with livestock maintenance along the border would be more time consuming.

The new access routes proposed would alter livestock patterns as they are developed. These routes would allow livestock to move into areas not previously available but by the same measure could increase human livestock interaction which could lead to increased vandalism and animal harassment.

Designation of right-of-way avoidance and exclusion areas would prevent most short-term impacts such as the disruption of grazing patterns associated with right-of-way development. Where right-of-ways were granted, there could be a initial disruption in livestock grazing patterns during the construction phase. Patterns would return to normal upon completion of the line or site.

Mineral activity for locatables and leasables would be open for most of the Resource Area subject to the standard stipulations. Some disruption in grazing patterns could occur over the short-term. Mineral material sales would continue to cause problems in the allotments in which they were located. Grazing use would decrease as the vegetation was removed. Long-term impacts to livestock grazing would be minimal as the animals adapt to the new activity.

An additional seven SRMAs would be designated in the Resource Area. All of these would require recreation or grazing activity plans to mitigate the potential conflict between livestock and recreational users on all 39 allotments involved. Development of primitive camping in five areas could change livestock use in those areas. The possibility of livestock and visitor interaction would increase especially in areas more heavily used by livestock as camping and grazing do not always mix well.

The development of six new HMPs would benefit livestock and wildlife by identifying conflicts and proposing appropriate measures to remedy these problem areas. All of the new plans would involve

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species which can coexist with livestock. Additional range improvements may be needed to implement rotational grazing plans. Grazing patterns may need to be changed to provide forage during key periods for both livestock and wildlife. Livestock AUs could be reduced if additional forage needed to meet wildlife population goals could not be derived from chemical treatments or prescribed burns. Bighorn sheep and livestock interactions in the existing HMPs, would continue to be a problem until the two animals are separated through range improvement development. Livestock grazing patterns would change as a result of these improvements. Coordinated activity plan would aid in the resolution of this problem.

Watershed activity plans on eight critical watershed areas, upon implementation, would improve ground cover and lessen soil loss. Forage would improve for a variety of uses including livestock. Distribution of livestock would improve which would improve me patterns. Some constraints, such as livestock removal for certain periods, could be placed on grazing practices in these activity plans.

Vegetation sales of native plants and the new sale area between Deming and Lordsburg would have a small impact on grazing use, most of this associated with increased human activity and some off-road vehicle use. The removal of some yucca plants would have a minimal impact as livestock prefer the stalks in the spring.

The desired plant community for this Alternative would involve a substantial amount of brush treatment by a chemical herbicide (for additional information on chemical brush treatment see the SRG EIS, (BLM 1981) and Las Cruces/Lordsburg MFPA/EIS (BLM 1984)). Most of the brush dominated areas would not show a change unless treated with a chemical designed to kill that specific shrub species (such as Spike 20P). Most brush treated areas would change to a grass/forb dominated area in the short-term with shrubs moving back in over time. With proper grazing management, the effects of a brush control, such as increased plant diversity and production, improved ground cover and soil stabilization can last for the long-term. All chemical treated areas are rested from livestock grazing for at least the second and third growing season after treatment.

The chemical treatment would improve forage condition and under this Alternative, livestock would be the primary beneficiary. Burn areas are normally rested until regrowth has attained a height of 4 inches on the forage species. Proper use levels on black grama of 50 percent would maintain present grazing levels. Black grama, a preferred species, is believed to be less drought and grazing tolerant than other native species.

The elimination of livestock grazing would continue on 6,546 acres of public land. Most of these areas have been withdrawn from grazing because of significant riparian, recreational or wildlife values. These areas include the Red Rock Game Farm and Central Peloncillo Mountains for bighorn sheep and the Organ Mountain for riparian and recreation uses.

Riparian and arroyo habitat would continue to attract livestock. The damage from trampling and grazing would be mitigated through a rotational grazing activity plan which takes into account the need of the vegetation, wildlife and livestock. In areas where livestock use is excluded by fencing, additional improvements would be needed to disperse livestock use. Grazing patterns would change. Because these areas are small, the impact to livestock would be minimal.

Special status plants and management of their habitat are incorporated into ACEC prescriptions. As a result, livestock grazing practices may be modified as plant needs are identified.

IN SUMMARY, acquisition of land, vehicle use limited to existing or designated roads and trails, watershed management plans, desired plant community changes through chemical treatment and 50 percent use on black grama would have short- and long-term impacts on livestock grazing under this Alternative by limiting the human/livestock interaction patterns and allowing improved forage condition. Land disposal which could result in a loss up to 31,890 AUs, SRMAs and the elimination of livestock grazing would have short- and long-term impacts through the loss of livestock use.

VEGETATION

The disposal of public land could impact the vegetation resources in those areas. Lands under

BLM jurisdiction are managed and protected under the multiple-use mandate. Disposal lands are usually identified for city expansion. Subsequent development usually requires leveling, clearing and other surface disturbing activities. Most of the identified blocked land is on the East Mesa. Many parcels of land are one section or less in size and are scattered through out the Resource Area mainly in Grant and Luna Counties. Acquired lands from the State and private sector would come under the multiple-use and protection mandate. Many of the acquired lands would possess rare or unusual plant communities. The retained lands would remain the same.

The designation of ACECs would provide an extra measure of management and protection to the native vegetation. Many of the ACECs have been identified for biological reason. All vehicular traffic would be limited to designated roads and trails in these ACECs unless the area is closed to vehicle use. Parking and camping areas have been proposed in some of the ACECs. The removal of vegetation, under this Alternative, would be approximately 13 acres. Livestock grazing if permitted, would require a grazing activity plan. Mineral entry opportunities would be severely limited thus protecting the vegetation resource. Interim Management Policy restrictions in the four areas for wilderness review would provide additional protection to the vegetation resources. Vehicle use would be limited to existing roads and trails or closed to vehicle use in designated wilderness areas. The maintenance of vegetation in its natural state is an objective of wilderness management.

There would be 16,190 acres in two new areas designated open to off-road vehicle use. While vegetation in these areas could be lost or damaged, the surrounding areas should sustain less abuse from vehicle use. Limiting vehicle use to designated or existing roads and trails would protect the vegetation resource. Closed areas would prevent vegetative resource damage from vehicle use.

Development of new access would cause vegetation disturbance or destruction along the length of the new route. Under this Alternative, several new miles of access would be developed with an average of 1 acre of vegetation disturbance per mile of new access. If the road was not bladed,

vegetation would remain between the tire tracks. Vegetation loss would be minimal.

The designation of right-of-way exclusion areas and right-of-way avoidance areas would prevent or greatly limit vegetation disturbance in these areas. Impacts to vegetation would be short-term. Reseeding and recontouring stipulations mitigate long-term impacts.

Areas closed to mineral entry would prevent vegetation loss from this mineral action. The rest of the Resource Area would be open to mineral entry. There would be some initial vegetation loss as areas are explored and developed. All disturbed areas would be recontoured and reseeded. Native plants are made available to the public whenever possible. Successful reclamation would be dependent upon climatic conditions.

The designation of seven new SRMAs and the accompanying plan which would be developed on these new areas could cause some vegetation loss as recreation sites were developed in the short-term. Long-term benefits to the native vegetation resource could be realized through educational awareness. With visitor use concentrated in "high" impact areas, surrounding vegetation types would receive less human impact. The acquisition of four State parks should not impact the vegetation resources unless visitor use increased. The development of five new primitive recreation sites could cause short- and long-term vegetation loss.

Six new HMPs would establish vegetation management objectives for wildlife and other uses and outline ways to achieve these objectives. These plans should balance use levels on key species used by wildlife and livestock. Kew vegetation species should improve and increase. Project development could cause short-term vegetation loss (several acres).

Watershed activity plans for eight critical watershed areas would benefit the vegetation resource by providing for the stabilization of the soils and reestablishment of native vegetative species. Project development could cause the loss of vegetation on several acres in the short-term.

Vegetation sales of native plants in the existing areas and the establishment of a new sale area

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between Lordsburg and Deming would cause minimal damage to the vegetation resource. Yucca, ocotillo and desert willow are the species identified for the new area. Some off-road vehicle use would be required which could cause damage to other plants.

The desired plant community concept, under this Alternative, would be to treat large acreages of brush with chemical herbicides (for further information on chemical brush control see the SRG EIS and Las Cruces/Lordsburg MFPA/EIS). It is expected that brush dominated areas on nearly 1.5 million acres would be replaced with a mixture of grasses, forbs and some shrubs. Prescribed and natural fire would be used to treat other areas. The areas which would be expected to respond to a fire are mixed desert shrub greater than 10 percent slope, mountain brush areas, snakeweed types and grass bottomlands. Brush invasion in the grass bottomland would be limited with these burns. Areas presently dominated by brush species do not allow for much species diversity and in many cases contribute to soil loss.

Setting the maximum use level on black grama of 50 percent would maintain the present use levels. The long-term survival of black grama could be jeopardized as the plant appears to be less drought and grazing tolerant than other forage species. Black grama is a preferred species. Other associated species would benefit as their use levels, in most cases, would be less than black grama. Eliminating livestock grazing on 6,546 acres could protect forage species from livestock over use and may permit an improvement in vegetation conditions in some areas but by the same token the benefits which can be associated with proper grazing management such as old growth removal plant stimulation from proper grazing would not be realized.

Riparian and arroyo habitats under this Alternative would require a grazing activity plan for each area. Most surface disturbing activities would occur outside these zones. All of the areas would be closed to vehicle use or limited to designated roads and trails. Visitor use would be directed away from most riparian areas. All of these measures would help in the short- and long-term reestablishment of riparian vegetation.

IN SUMMARY, beneficial impacts to the vegetation resource by adhering to BLM's mandate to manage and enhance public land or because areas have withdrawn or limited uses assigned to them, would occur from the following actions: multiple use management and acquisition of land, ACEC designation, vehicle use limited to designated or existing roads and trails, SRMAs, watershed management plans, desired plant community objectives, and the elimination of livestock grazing. As a result of meeting desired plant community objectives and land treatments, vegetation diversity and ground cover would be improved on nearly 1.5 million acres. The disposal of public land and 50 percent use on black grama would have short- and long-term impacts from potential permanent vegetation loss.

SOIL/AIR/WATER

Soil

Under this alternative, the amount of land identified for disposal is significantly higher than that identified under Alternative A. These lands could be subject to soil disturbance. Lands near urban centers could be subjected to clearing, levelling, and construction activities. Any soil loss from accelerated erosion would be irretrievable. Lands away from urban centers could be subjected to surface disturbing activities such as grazing, mining, and recreation use. Acquisition and consolidation of lands would protect the soil resource because activities on these lands would be regulated and limited in their scope and extent through improved management practice.

Management prescription for 27 ACECs would protect or enhance the soil resource on these lands by limiting or restricting mineral activity, right-of-way and off-road vehicle activities, development of livestock grazing activity plans, and Area Management Plan developments. Management activities such as parking facilities, primitive campgrounds and fences would cause soil disturbance on approximately 22 acres.

Off-road vehicle closures would be nearly four times as great as in Alternative A. This would protect the soil resource from disturbance and

vegetation loss while limiting off-road vehicle use to existing roads and trails over most of the Resource Area (about six times more than Alternative A), would protect the soil resource because soil surface disturbance and vegetation loss would not extend beyond existing roads and trails. Areas open to off-road vehicle use would result in soil surface disturbance, compaction and vegetation loss over a greater area.

Developing access to 24 areas will have significantly greater impact than in Alternative A. This could mean miles of new road construction and hundreds of acres of new disturbance.

Right-of-way avoidance areas would benefit the soil resource because if rights-of-way must be located in these areas they would be subject to special stipulation to minimize effects from construction activities. Right-of-way exclusion areas would benefit the soil resource because activities associated with the right-of-way would not occur in these areas. Areas open to rights-of-way subject to standard stipulations would be affected by surface soil disturbance activities such as construction and continued use of the right-of-way by vehicles.

Exploration and development of fluid minerals on lands which are open to leasing would affect the soil resource by disturbing surface soil near exploration sites by activities such as construction of access, drilling, site clearing and in the case of development, installation of utilities, structures and additional access if needed. Areas open to fluid mineral leasing with site-specific stipulations would be subjected to soil surface disturbance which would be mitigated by the site-specific stipulations.

The entire Resource Area (excluding non-discretionary withdrawals) would be open to locatable mineral entry (subject to standard stipulation). This would result in site-specific soil disturbance and vegetation loss from drilling, trenching, mining, construction of access roads, clearing of sites, and deposition of tailings from the mine.

Activities in areas open to salable mineral disposal (subject to standard stipulations) would result in the removal of the soil surface, construction of access roads, clearing and levelling of sites for

equipment and salable material storage. Areas closed to salable mineral disposal would not be subjected to soil disturbance from salable material disposal activities.

The two existing SRMAs, Organ Mountain and Gila Lower Box, would continue, seven additional SRMAs would be designated, and the remainder of the Resource Area would be managed primarily for dispersed recreation opportunities. In the Organ Mountains SRMA activities (hiking and camping) which may impact the soil resource by causing erosion and soil compaction, are limited to designated and maintained trails and campgrounds at Aguirre Spring Recreation Area and designated and maintained trails at Dripping Springs Natural Area and established but unmaintained trails throughout the remainder of the SRMA. The Gila Lower Box Area and the seven additional SRMAs are subject to unrestricted hiking and camping, and soil erosion and compaction may occur where unmaintained trails and campsites are found. However, these activities tend to be of short duration. Development of primitive campsites would subject a total of several acres in these areas to site-specific soil disturbance, soil compaction, and vegetation loss.

Implementation of the existing six HMPs and development of six additional HMPs would provide protection to the soil resource in these areas because activities which may occur in these areas are generally limited in scope and extent by existing management guidelines. Impacts to the soil surface from habitat development projects would be limited and would not be permanent.

Developing watershed plans on eight areas would improve, protect, and enhance the soil resource by improving vegetation ground cover, reducing erosion, and reducing runoff while increasing percolation of water into the ground. These results would be realized by improving grazing practices, restricting off-road vehicle, mining, and recreation activities on these areas.

Soil surface disturbances on the East Mesa vegetation sale area near Las Cruces and the addition of a vegetation sale area near Deming would be limited to specific sites where digging of individual plants occurs and where off-road vehicles are used within these sale areas.

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Vegetation treatments would consist of prescribed fire and chemical brush control (up to 10,000 acres per year). Prescribed fires would have short-term effects on soil because vegetation cover would be removed (regrowth in 1 to 2 years) and hot spots in fires can alter physical soil surface properties by reducing organic matter, decreasing nitrogen content and reducing soil microbes (Wright and Bailey 1982). These alterations are not permanent and recovery occurs with revegetation of the area. Chemical brush control on areas of creosotebush would not increase the soil surfaces susceptibility to wind and water erosion. Vegetation treatments and proper grazing management would benefit the soil resource through increased herbaceous ground cover, and reduction of cattle trails and sacrifice areas near water.

The soil resource on areas excluded from grazing (Gila Lower Box, Red Rock Game Farm, Central Peloncillo Mountain, Organ Mountain) would not be impacted by trampling and trailing associated with livestock grazing.

Secured instream flows for the Gila River would benefit the soil resource because water levels within the stream channel would be maintained allowing streamside vegetation to increase resulting in stable stream banks and dense ground cover to trap sediment carried by flood waters.

IN SUMMARY, under this alternative, impacts to the soil resource could result from the disposal of land, opening the area to locatable and fluid mineral activities, and development of vehicular access to 24 areas. The soil resource would benefit from watershed planning, development of six additional HMPs, designation of 29 ACECs.

Air

Lands identified for disposal would not be managed by the BLM. Restrictions on activities would be the responsibility of State and local governments. Improved manageability through acquiring and consolidating lands would maintain or improve air quality because activities on these lands would be limited in scope and extent.

Development of management prescriptions for 27 ACECs would help maintain air quality over these areas by closures to mineral material sales, right-

of-way and off-road vehicle limitations or restrictions and management as Class II for air quality on the Big Hatchet Mountains and Florida Mountains.

Proposal of four new areas for wilderness study would help maintain air quality over these areas because under Interim Management Policy guidelines activities within these areas are limited in scope and extent.

Areas closed to off-road vehicle use would help maintain air quality over these areas. Off-road vehicle activity degrades vegetation, and disturbs the soil surface which could increase wind erosion and dust in the air. Limiting off-road vehicle use to existing or designated roads and trails help maintain air quality by decreasing the amount of vegetation loss and soil exposure resulting in less area that would be susceptible to wind blown dust. Areas without existing roads and trails would not be disturbed, and air quality away from these roads and trails would not degrade. New areas open to off-road vehicle use would be subjected to vegetation degradation, soil disturbance, and wind erosion. This would add dust to the air in these areas.

Developing access to 29 areas could result in the construction of miles of new roads which would increase dust levels in the air over these areas. After construction, vehicle use of these roads would also add dust to the air.

Designating right-of-way avoidance areas would help maintain air quality because rights-of-way would not be allowed in these areas without special stipulations. Designating right-of-way exclusion areas would help maintain air quality because soil disturbances and vegetation loss associated with right-of-way activities would not occur.

Activities in areas open to rights-of-way (subject to standard stipulations) could reduce air quality from construction and vehicle activities over the immediate area. Most air quality reduction occurs during construction activities.

Activities in areas open to fluid mineral leasing (subject to standard stipulations) would affect air quality during exploration and development of these resources. Activities such as access,

construction, and site preparation during exploration would increase dust levels. Development activities such as access construction, site preparation, and utilities construction would reduce air quality over the area of development. Activities in areas open to fluid mineral leasing with site-specific stipulations would not greatly affect air quality. The type of activities would be limited in scope and extent.

Areas open to locatable mineral entry would be subjected to air quality reduction from activities such as construction of access, digging, and exposure of disturbed soil and tailings to wind erosion.

Areas open to mineral material disposal would be subjected to air quality reduction, in localized areas, from dust caused by construction and use of access, removal of vegetation, disturbance of topsoil, and exposure to wind which would carry the dust to other locations. Areas closed to mineral material disposal would not be subjected to air quality reduction caused by mineral material disposal activities.

Watershed planning on eight areas would help maintain air quality over these areas through management practices such as improved grazing practices, and restrictions on mining, off-road vehicle, and recreation activities. Watershed planning maintains or increases ground cover and reduces soil disturbance.

Vegetation treatments would consist of prescribed burning and chemical brush control (up to 10,000 acres per year). Prescribed burning would have short-term effects on air quality from smoke (1 to 3 days). Chemical brush control on areas of creosotebush would not affect air quality from dust.

IN SUMMARY, under this alternative air quality could be affected by land disposals, increased vehicle access, and locatable mineral entry and fluid mineral leasing open throughout the entire Resource Area. The effects would result primarily in increased dust content in the air near these activities. Watershed planning, vegetation treatments, and off-road vehicle use limited to designated or existing roads and trails could prevent air quality reduction by reducing

vegetation loss and reducing wind erosion of exposed soils.

Water

Under this alternative, lands identified for disposal are significantly higher than Alternative A. Most of the land is located on the East and West Mesas near Las Cruces. BLM would no longer have management responsibility and an indirect effect of disposal could be urbanization which would be under the control of State and local regulations. Improved manageability through acquisition and consolidation of land would help maintain water quality because activities on these lands could be managed to protect the resource and would be limited in scope and extent.

Development of management prescriptions for 27 ACECs would protect and enhance surface and ground water resources on these lands. Closure to mineral material sales, off-road vehicle and right-of-way restrictions, development of livestock grazing activity plans and the revision of existing allotment management plans would protect surface vegetation which would reduce surface runoff, decrease erosion, and increase percolation of water into the ground.

Special restrictions to protect values on the wild and scenic river study for portions of the Gila River which is on public land would limit activities and would provide management to protect and enhance wild and scenic river values such as scenic quality, wildlife and fish, recreation, geology and cultural.

Areas closed to off-road vehicle use would protect the vegetation and eliminate soil surface disturbance. Runoff would not cause excessive water erosion of exposed soil and water percolation into the ground would be increased. Limited off-road vehicle use to existing and designated roads and trails would protect the water resource because surface disturbance and vegetation loss would not extend beyond the existing roads and trails. New areas open to off-road vehicle use would result in soil disturbance, vegetation loss, and water erosion.

Watershed planning would provide management for land which is subject to excessive wind and

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water erosion. Activities associated with grazing, mining, recreation, and off-road vehicle use would be managed to improve grazing practices, and limit or mitigate mining, recreation and off-road vehicle uses.

Vegetation treatments would consist of prescribed fire and chemical brush control. Prescribed fires stimulate vegetation growth and increases ground cover which would reduce erosion and increase percolation of water into the ground. There could be a short-term increase in runoff (1 to 2 years) until the area revegetates and ground cover is reestablished. Chemical brush control would increase vegetation ground cover which would reduce water erosion and increase percolation of water into the ground.

Elimination of grazing may increase vegetation ground cover which would reduce runoff and increase percolation of water into the ground.

Secured instream flows for the Gila Lower Box and Gila Middle Box would enhance riparian vegetation communities and stabilize streambank which reduces the impacts of flooding by slowing down water flows which allows for increased percolation and sediment collection.

IN SUMMARY, the water resource could be affected from land disposals resulting in urbanization of these areas. Increased ground cover, reduced erosion, and increased percolation, would occur from areas being managed for watershed protection, wildlife habitat, and ACECs.

WILDLIFE

Lands identified for disposal near urban areas could be subjected to development activities which could degrade habitat and reduce wildlife populations such as small mammals, birds, and reptiles. Disposed lands away from urban areas could also be subjected to unregulated activities such as increased grazing, mining, and recreation, which could degrade habitat. Under this alternative, more land would be disposed of than would be disposed of under Alternative A. Improved manageability through acquisition and consolidation of lands would benefit wildlife because they may contain significant or sensitive habitat for wildlife. Additionally these acquired lands could serve as a buffer for sensitive habitats.

Development of management prescriptions for 27 ACECs would benefit wildlife by closing these areas to mineral material sales, restricting off-road vehicle use, development of livestock grazing activity plans, and revision of existing AMPs. These actions would reduce habitat degradation, wildlife displacement, and competition between livestock and wildlife for forage, cover, and space.

Proposal of four new areas for wilderness study would help protect and enhance wildlife habitat because activities on these areas would be limited in scope and extent. Interim management of these areas may not allow for certain wildlife habitat improvement projects to occur.

Actions taken to protect values identified in the wild and scenic river study for the Gila Lower Box and Gila Middle Box would help protect and enhance riparian wildlife habitat which is found along the river and free flow of water would maintain habitat for fish species. All activities which may affect wild and scenic river qualities would be limited in scope and extent.

Lands closed to off-road vehicle use would not be subjected to habitat degradation from vegetation loss and soil disturbance and wildlife disturbances would not occur. Limiting off-road vehicle use to existing and designated roads and trails would prevent habitat degradation and wildlife disturbance from areas without designated roads and trails. Some degradation may occur near these roads and trails. New areas open to off-road vehicle use would be subjected to habitat degradation and wildlife disturbance from off-road vehicle activities (Bury, et al. 1977). Compared to Alternative A where less land is designated as open, limited, or closed and most of the Resource Area is undesignated, impacts to wildlife would be less.

Developing new vehicle access into 29 areas could cause habitat degradation from construction and increased vehicle use in these areas (Bury, et al. 1977).

Designation of right-of-way avoidance areas would prevent or minimize disturbances to wildlife and wildlife habitat. If a right-of-way is needed through these lands then stipulations would be required to minimize habitat degradation and wildlife disturbance. Right-of-way exclusion areas would

not be subjected to activities which would degrade habitat. Areas open to rights-of-way (subject to standard stipulations) would be subjected to habitat degradation and wildlife disturbances from activities associated with installation of utilities and vehicle use along the rights-of-way.

Activities in areas open to fluid mineral leasing would affect wildlife by site-specific habitat degradation and wildlife disturbances during exploration activities such as access construction and drilling. Prolonged development of fluid minerals resources would degrade habitat and reduce wildlife populations from larger areas which include developed fields, access, and utilities such as pipelines. Activities in areas open to fluid mineral leasing with site-specific stipulations would limit or reduce impacts to wildlife and wildlife habitat.

Areas open to locatable mineral entry would be subjected to activities such as access construction, drilling, site levelling and clearing for storage of equipment, minerals and tailings would degrade habitat and displace wildlife from the areas of activity. Effects from exploration activities would be short-term while the development of mines would have long-term effects. Areas withdrawn from locatable mineral entry would not be subjected to exploration and development activities which could degrade habitat and displace wildlife.

Extraction of salable mineral materials results in the removal of surface vegetation and soil surface, construction of access roads, and clearing and levelling of a site for storage and placement of equipment and mineral material. These activities would degrade habitat and reduce wildlife populations in these areas. Areas closed to mineral material disposal would not be subjected to mineral disposal activities which would degrade habitat.

Continued implementation of six existing HMPs and the development of six additional HMPs would benefit wildlife by protecting and enhancing wildlife habitat in these areas. At present, these areas have an estimated population of 1,680 deer, 60 to 80 desert bighorn sheep, and 500 antelope (most of which occur on private or State trust lands). Proposed minimum population levels in these existing and proposed HMP areas would

result in an increase of 445 deer, a 20 percent increase over present, 1,170 desert bighorn sheep, and 300 antelope occurring primarily on public land.

Development of watershed plans for eight critical watershed areas would protect and enhance wildlife habitat components (vegetation and soil) by management activities such as erosion control projects, grazing management, and recreation management.

Prescribed burning would impact wildlife by altering habitat. Habitat improvements realized from prescribed fires on fire dependant vegetation communities are increased browse and forage, increased habitat diversity, and a continuation of natural vegetation community development (Wright and Bailey 1982).

Elimination of grazing would reduce competition between livestock and wildlife (where it occurs) in key habitats (particularly for desert bighorn sheep) for forage, cover and space (Sandoval 1982; BLM 1986). Important habitat features within these areas such as high saddles, thickly vegetated hillsides and arroyos, and riparian areas would not be affected by livestock grazing.

IN SUMMARY, under this alternative wildlife would be affected by increased land disposal, increased off-road vehicle open areas, increased development of access, and increased mineral activities on more land. These activities would degrade habitat. Watershed management, wild and scenic river studies, increased limited and closed off-road vehicle designations, and wildlife habitat management plans development would benefit wildlife by protecting or enhancing wildlife habitat.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Acquisition or disposal of land can cause varied impacts to cultural resources. For example, acquisition of a significant Apachean site or Paleoindian camp or kill site would enhance the diversity of sites within the Mimbres Resource Area since few sites of this type are currently

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documented. Conversely, disposal of sites of this type would reduce diversity in the Mimbres Resource Area.

Impacts to cultural resources eligible for the National Register of Historic Places located within lands identified for disposal are mitigated through excavation and other methods. These mitigative efforts result in determinations of "no adverse effect through data recovery." However, these data recovery methods treat only portions of sites and some data is lost. In addition, modern excavation techniques will be considered primitive by future researchers. This alternative has the most public land identified for disposal.

Through ACEC designation cultural resource sites and areas significant on a National level could be given special management attention to protect the cultural values resulting in additional protection of the resources. ACEC management prescriptions would provide for phased, long-term protective actions for the affected sites.

Under this alternative, 13 ACECs (Alamo Hueco Mountains, Apache Box, Fillmore Canyon, Ice Canyon, Massacre Peak, Pony Hills, Cooke's Range, Dona Ana Mountains, Los Tules, Old Town, Rincon, San Diego Mountain, and Paleozoic Trackways) having significant cultural or paleontological resource values would be designated.

Significant prehistoric rock art (petroglyphs) would be protected at the Dona Ana Mountains, Rincon, Massacre Peak, Pony Hills, and San Diego Mountain ACECs. In the Alamo Hueco Mountains, rockshelters and open sites representative of the Archaic through Apachean periods would be offered additional protection. Prehistoric rockshelter habitation sites would be protected within Apache Box. In Cooke's Range and Fort Cummings, historic mining sites and prehistoric open sites would receive additional protection. The significant Mogollon pithouse village of Los Tules and the large Mimbres village of Old Town would also be protected. Fillmore Canyon contains significant historic mining sites and Ice Canyon contains the historic Dripping Springs Hotel ruins. The Paleozoic Trackways ACEC includes an internationally significant 280-million-year-old amphibian and reptile trackway site.

Under this alternative, the Butterfield Trail and associated stage stations would be designated a Special Management Area resulting in specific management prescriptions for the preservation, protection, and public interpretation of the trail.

Closing or limiting off-road vehicle travel would help prevent damage to cultural resources within the closure areas. Designating public land open to off-road vehicle travel affects cultural sites where future off-road vehicle travel may occur. Increased unauthorized collection and vandalism would occur.

The acquisition of legal public access in the Cooke's Range would result in increased vandalism to cultural resources located beyond the existing locked gates.

Encouraging the use of right-of-way corridors would lessen affects on cultural resources by concentrating major rights-of-way in specific areas. Avoiding cultural ACECs with rights-of-way would result in reduced ground disturbances and visual intrusions to cultural resources within the ACECs.

Vandalism to cultural resources would be expected to increase as a result of increased mining activity (as all of the Resource Area would be open to locatable mineral entry and fluid mineral leasing). Mining activity usually results in more access roads and therefore easier access to cultural sites by miners and the general public. Easier access to unprotected cultural sites results in increased damage and vandalism to the sites. These impacts can be minimized but not eliminated through public education, signing, monitoring programs, and additional law enforcement support. In addition, vibration from blasting, mine equipment, and vehicles could affect the stability of standing adobe or masonry walls where these structures exist such as historic mining districts and homestead ruins. Any degradation of cultural resources would result in irreversible and irretrievable losses of information.

Mining can be detrimental to paleontological resources by destroying fossil resources, such as at the Paleozoic Trackways ACEC. However, mining activity can also expose new fossil localities. The impacts would generally be limited due to the small size of most mining operations.

The development of primitive campsites in five areas would increase public visitation to unprotected cultural resources in those regions and subsequent increased damage to those sites would result.

Protection of riparian areas would reduce erosion of cultural sites. Riparian areas typically have high concentrations of historic and prehistoric sites.

The effects of vegetation use through livestock grazing are generally low-level, except where conditions combine to concentrate cattle. Proximity to water, certain types of forage, natural barriers, or fences can result in channeling cattle to result in intensive trampling of artifacts and archaeological features, as well as increased site erosion. Eliminating livestock grazing by the construction of enclosures reduces these impacts.

Under this alternative, the Old Town Site, Fort Cummings, and the Dripping Springs Natural Area would be excluded from livestock grazing which would reduce cattle trampling of these sites. Class III cultural inventories would be conducted at Fort Cummings, San Diego Mountain, Pony Hills, and Rincon ACECs. These inventories would result in the location, identification, and description of archaeological sites which would allow for more intensive protection and management efforts at these sites.

Historic trails and roads within the Mimbres Resource Area such as the Camino Real, Santa Rita Copper Trail, Spanish exploration routes, and historic emigrant wagon roads would be researched allowing for more intensive management and interpretation of these resources.

Historic mining towns and features at the Cooke, Jose, Stephenson-Bennett, Modoc, Tres Hermanas, Pyramids, Pino Altos, Peloncillos, Floridas, and Carlisle/Summit would be subjected to historic field and records research resulting in more detailed knowledge of the historical significance of these sites. This additional research would lead to better interpretation of the sites to the general public.

Archaeological field schools would be initiated at several sites including Old Town, Bruton Bead, Indian Basin, East Potrillo, South Florida, and Camp Cody. These field schools would help

establish the significance and research potential of these sites and enhance BLM's abilities to properly manage these localities. This research would result in better communication with the public and greater interpretation of the resources to the public.

Public access to important rockshelter sites such as Apache Box would be restricted through the use of metal grates over some of the shelter openings. In addition, these sites would be subjected to increased patrols and monitoring which would provide greater security and protection.

An effort to acquire significant Butterfield Stage Station Sites would be initiated which could result in the protection, stabilization, and public interpretation of these important sites. Old Town and Pony Hills would be intensively managed in accordance with the provisions of the Mimbres Culture Study legislation, and the BLM portion of the Redrock Cemetery Site would be transferred to the National Park Service. These actions would result in reduced vandalism at the sites and enhanced public interpretation.

The Paleozoic Trackways Site would be intensively managed in accordance with the provisions of the Paleozoic Trackways Study legislation. This would result in greater protection and monitoring at the site and possibly the construction of an interpretive center. Environmental education would be stressed at the Center. In addition, paleontological surveys would be initiated in the Robledo Mountains, Aden Lava Flow, and Alamo Hueco Mountains. These surveys could result in the identification of new paleontological localities. This identification would result in new research at these sites and greater protection through monitoring and patrol. These discoveries would also enhance the BLM's public education efforts regarding paleontological resources in New Mexico.

IN SUMMARY, under this alternative, production-oriented programs would be emphasized with resultant probable effects on cultural resources. Through land ownership adjustments, some new cultural sites would probably be acquired allowing those sites to come under BLM administration. Twelve ACECs containing cultural values would be designated and

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management prescriptions implemented for these ACECs. Designating the majority of the Mimbres Resource Area as limited to existing roads and trails would reduce unauthorized collection and vandalism of cultural resources. The acquisition of new access at Cooke's Peak would result in increased vandalism of cultural resources in the Cooke's Range with the subsequent removal of the existing locked gates. Encouraging the use of right-of-way corridors would reduce ground disturbance and visual intrusions of cultural resources. Opening the entire Resource Area to locatable mineral entry would result in new access roads and therefore easier public access and more damage to unprotected sites. The development of primitive campsites in five areas would increase public visitation to unprotected cultural resources in those regions and subsequent increased damage to those sites would result. The effects to cultural resources of vegetation use through livestock grazing are generally low-level and related primarily to the effects of livestock trampling on fragile artifacts and features.

Reduction of soil erosion in riparian areas would reduce site erosion in high site density areas located in or near to riparian areas.

RECREATION

Disposal of isolated public land parcels would reduce the amount of public land in the Resource Area by 7.6 percent, although there would not be a significant reduction in recreation opportunities in the Resource Area because much of the disposal acreage is currently inaccessible to recreationists, and access acquisition and construction to other well-blocked public land in the Resource Area would more than compensate for this 7.6 percent decrease in acreage. Disposal of land adjacent to the City of Las Cruces would reduce opportunities for recreation on public land in the Mimbres Resource Area by 2.6 percent. Opportunities for quail and rabbit hunting, mountain biking, off-road vehicle use, and walking would be most affected, since those are the predominant uses of the disposal lands. Urbanization of the disposed lands would produce new opportunities for developed recreation at parks, schoolyards, and other areas that would provide expanded myriad urban recreation opportunities. Acquisition of State trust and private land would result in a net decrease of only

4.6 percent in public land acreage available for recreation in the Resource Area.

Acquisition of lands in the SMAs throughout the Resource Area would improve recreation opportunities in those areas by improving public land patterns and reducing conflicts associated with land ownership boundaries. Recreation on those lands would not differ significantly from that on existing adjacent public land, but legal public access to those areas for recreation would improve while the potential for conflicting development would greatly diminish. The natural character of acquired lands would be protected, enhancing most dispersed outdoor recreation opportunities in which quality is generally enhanced by a lack of human development and disturbance. Opportunities for long-distance hikers would be enhanced by acquisition of lands along a Continental Divide National Scenic Trail route through the Peloncillo Mountains. Acquisition would also enable BLM to provide facilities for developed recreation, such as trails, trailheads, and parking lots. Acquisition of up to six State Parks would increase opportunities for developed recreation on public land, particularly in Luna and Dona Ana Counties, and would allow a tremendous increase in the diversity of developed recreation opportunities on public land in the Resource Area. Recreation use levels would not be expected to increase at these sites as a result of acquisition.

Dispersed recreation opportunities for which quality is enhanced by increased naturalness in the setting including fishing, hunting, climbing, hiking, and picnicking would benefit from vehicle closures or limitations on 99.4 percent of the Resource Area including ACECs. Interim management of areas for wilderness study and ACEC designation would restrict vehicular recreation in some areas to protect fragile riparian, scenic, cultural, endangered species, and other resources. Vehicular access for other forms of recreation would not be significantly affected by wilderness interim management and ACEC designations.

Development of access routes would enhance the public's ability to enjoy outdoor recreation throughout the Resource Area for dispersed types of recreation including hunting, rockhounding, hiking, and birdwatching. Enhancement of these

opportunities should be provided throughout the Resource Area in areas where public land is well-located and recreation access is desired by the public. Recreation users would also benefit from access development to and across public land as additional county, State, and Federal roads are built.

Vehicle recreation would be greatly enhanced by the development of new right-of-way routes, livestock developments, and exploration and development routes associated with leasable, salable, and locatable minerals. Under this alternative, where access development would be primarily for vehicular access, these commodity uses would provide the majority of new routes for vehicular access to and across public land. New rights-of-way would be restricted from 84,950 acres and avoided in 303,480 acres, and new vehicular access routes for recreation would not be likely to occur in these 388,430 acres as a result of right-of-way development. New vehicular recreation and access routes would be most likely established as a result of right-of-way activities in the intermountain desert areas that cover most of the Resource Area.

Primitive recreation opportunities within right-of-way avoidance and exclusion areas, areas open to fluid mineral leasing with special stipulations, and closed to mineral sales would be enhanced by the maintenance of pristine conditions and the lack of disrupting activities that could degrade the natural quality of outdoor experiences on public land.

Development of primitive campsites in the Animas Mountains, Peloncillo Mountains, Big Hatchet Mountains, Gila Lower Box, and Florida Mountains plus the acquisition of Spring Canyon, Rockhound, Leasburg, Fort Selden, Pancho Villa, and City of Rocks State Parks would increase opportunities for developed picnicking and camping on public land by up to 100 percent, and disperse opportunities for developed recreation over the entire Resource Area. Developed recreation sites would be available within 50 miles of any place in the Resource Area, and expanded opportunities for rockhounding, hiking, picnicking, fishing, nature study, and historical interpretation would be enhanced over the entire Resource Area. Total recreation visits could be expected to increase to 460,000 per year.

Cultural Resource Management Plan development would enhance recreation opportunities in the Organ Mountains, at Fort Cummings, at stage stops along the Butterfield Trail, and at the Massacre Peak Petroglyph Site primarily through access development and interpretation. Interpretation of natural values in ACECs and cultural and paleontological values at other sites would add diversity to the recreation opportunities available within the Resource Area. The addition of new interpretive sites would increase interpretive recreation potential within the Resource Area, while materials from sites such as the Paleozoic Trackways Site may be displayed in locally, regionally, and even internationally significant museums including the Carnegie Institute Museum of Natural History and the Smithsonian Institution.

Wildlife habitat improvement within the guidelines of habitat management plans, along with game management by the New Mexico Department of Game and Fish could allow increases in game to sustain increased populations of deer, pronghorn, and small game for the enjoyment of hunters and non-consumptive wildlife enjoyment such as photography, and bird watching. Pronghorn habitat management in the Columbus, Cooke's Range/Nutt, Robledo Mountains, and Cedar Mountains would allow greatly expanded opportunities for pronghorn hunting in the Resource Area. Deer and small game hunting quality would improve in those areas as well as the Uvas Mountains and the West Potrillo Mountains. Habitat management plans and associated herd management by the Department of Game and Fish should also lead to the recovery of mule deer in the Organ Mountains and deer and desert bighorn sheep in the Peloncillo, Big Hatchet, and Alamo Hueco Mountains to levels that would sustain regular harvests.

Development and implementation of watershed management plans and grazing management plans and establishment of instream flows in the Gila Middle and Lower Box ACECs would all improve the quality of hunting in those areas as ground cover increases, particularly for small game and game birds. Furthermore, other recreation uses for which quality is enhanced by increased naturalness such as hiking, and photography would benefit from these actions. Instream flow establishment

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would protect the warm water fisheries, as well as other types of riparian recreation in the Middle and Lower Boxes, which provide the vast majority of fishing opportunities in the Resource Area. The quality of other recreation opportunities in the Gila River Canyon would also be protected by instream flows.

Riparian and arroyo habitat management has the greatest potential to improve hunting quality for big game, small game, and game birds of any management practice in the Resource Area. Under this alternative, such improvements would be realized in the Apache Box, San Simon Cienega, Gila Lower Box, Gila Middle Box, Organ Mountains, Guadalupe Canyon, and Placitas Arroyo Riparian Demonstration Project.

IN SUMMARY, land ownership adjustments under Alternative C would impact recreation opportunities in the Resource Area, both from consolidating public land and thereby improving access and reducing potential management conflicts, and from acquisition and development of new access routes and recreation sites. Acquisition of up to six State Parks would increase opportunities for both developed and dispersed recreation in Luna and Dona Ana Counties. Vehicle designations combined with land disposal would eliminate off-road vehicle use opportunities over much of the Resource Area, although vehicle recreation opportunities would remain on existing or designated roads and trails over 98 percent of the Resource Area. Designation of new open areas would increase opportunities for off-road vehicle use on designated intensive use areas by 389 percent over Alternative A. Development of access routes would improve hunting, hiking, and many other recreation opportunities throughout most of the Resource Area. Right-of-way exclusion and avoidance areas would preserve the natural integrity and primitive recreation quality of ACECs. Wildlife habitat management would allow increases in hunting opportunities for pronghorn, deer, and small game. Watershed and grazing management would be used to improve quality of primitive recreation opportunities such as hunting on portions of the Resource Area. Establishment of instream flows would ensure the maintenance of warm water fishing opportunities and other recreation qualities in the Gila Middle and Lower Boxes.

VISUAL RESOURCES

Under Alternative C, visual resources could be impacted from the acquisition of State trust and private land within Class I and II areas. Disposal of public land would reduce small public land parcels in the Resource Area, many of which are in Class II and III areas. Despite the inclusion of Class II and III areas, disposal of these isolated parcels would not have a significant effect on the scenic quality of landscapes because actions that could degrade scenery are much more likely to occur on non-Federal lands that currently predominate these landscapes. Conversely, acquisition of non-Federal inholdings in currently well-blocked public land would prevent activities in those areas that could degrade viewsheds on public land. Disposed lands adjacent to Las Cruces would likely become urbanized, degrading any scenic quality on those lands, but no areas of high scenic quality would be disposed. The acquired lands would be managed in conformance with VRM guidelines that would prevent any uses of those acquired lands from altering the form, line, color, or texture of the natural landscape.

ACEC designations would constrain activities that could degrade scenic quality on 86,180 acres, including 54,490 acres that would be managed as VRM Class I areas because of Scenic ACEC designations.

Wilderness study status of the Organ Needles, Gray Peak, Apache Box, and Pena Blanca areas would limit activities in those areas to conform with VRM class II guidelines.

Vehicle closures would prevent degradation of visual resources by vehicle use, while vehicle limitations would limit the production of new impacts on visual resources from vehicle trails over a greater area. The Aden Hills and Lordsburg South Playa could be heavily impacted by vehicles, with a corresponding degradation of visual resources.

Right-of-way avoidance and exclusion areas, and areas open only with special stipulations for mineral leasing, or closed to mineral sales would receive increased protection of visual quality.

Areas open to right-of-way and mineral leasing, sale, and location are mainly within VRM Class III and IV areas, and stipulations would be included to ensure conformance of any actions within these areas to VRM Class III or IV guidelines, whichever is appropriate.

Locatable minerals actions would likely cause degradation of scenic quality in some Class II areas.

Wildlife habitat, watershed, land treatments, and grazing management actions would allow improvement in vegetation resources that could alter the colors and textures of landscapes, enhancing the natural scenic quality of up to 1 million acres. Such actions could create contrasts in scenic vistas between the improved areas and adjacent untreated lands that could alter basic landscape colors.

Instream flows would impact the visual resources of the Gila River Canyon, in which the riparian community provides integral color, textural, and structural components of the landscape. Protection of the riparian community through instream flow acquisition is essential to maintain the lines, colors, and textures which enhance scenic qualities of the Gila Canyon.

IN SUMMARY, land ownership adjustments would impact visual resource management as lands in Class I and II areas are acquired, enhancing visual resource management of entire landscapes where current land ownership patterns preclude such management. Scenic ACEC designation and wilderness and wild river and scenic river studies would protect visual resources to prevent any but the most limited management alterations to the natural landscape. Vehicle closures and limitations would prevent new roads or off-road vehicle use from causing disturbances that could degrade scenic quality throughout the Resource Area exclusive of the Aden Hills and Lordsburg South Playa. Visual resources would gain increased protection from right-of-way exclusion and avoidance areas and areas limited by special stipulations for fluid mineral leasing or closed to salable mineral development. Locatable mineral development would likely degrade scenic quality in Class II areas. Large scale vegetation management changes such as wildlife habitat management,

watershed stabilization, grazing management would gradually create some contrasts in color of landscapes.

WILDERNESS

Acquisition of inholdings within WSAs would improve manageability of those lands in a manner that would enhance the wilderness characteristics of both the acquired lands and adjacent wilderness study area or wilderness area lands. Under this alternative, State trust and private land could be acquired to enhance management of those areas for natural values and for primitive and unconfined types of recreation. Existing developments and uses of those acquired lands would not be curtailed, although management actions might be tailored to mitigate impacts of those developments and uses in conformance with the Interim Management Policy.

Wilderness study of the Apache Box, Gray Peak, Organ Needles, and Pena Blanca areas would add currently unrepresented ecosystems to the National Wilderness Preservation System including highly scenic areas, historic sites, and habitat for endangered species.

Wild or scenic river study of the Gila Lower Box unit would enhance wilderness qualities of the portion of the unit that overlaps with the Gila Lower Box WSA. Such a designation would elevate protection of a portion of the wilderness study area pending wilderness designation. If the Lower Box is designated as both wilderness and a wild or scenic river, the two designations would provide overlapping protection of the river corridor, enhancing the naturalness of the area.

Vehicle closures and limitations would protect areas for wilderness study from degradation of naturalness by vehicle use.

Development of access routes would enhance the ability of wilderness users to reach and enjoy diverse areas.

Data retrieval and research on cultural and paleontological sites in the Apache Box, Gray Peak, Organ Needles, and Pena Blanca areas could degrade historic and prehistoric features of these areas that are considered to be supplemental

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wilderness values. Such activities would be constrained by the Wilderness Interim Management Policy.

Implementation of wildlife habitat management Plans would enhance wilderness values by maintaining or increasing wildlife populations and subsequent opportunities for activities such as hunting and wildlife photography.

When done to benefit wilderness values, watershed stabilization, livestock grazing management, and acquisition of instream flows would all enhance wilderness qualities by stabilizing important natural ecosystem components. These actions would lead to improvement in opportunities for primitive and unconfined types of recreation such as hunting, fishing, hiking, nature study, and photography.

Vegetation treatments would only be allowed within WSAs to the extent they conform to the Interim Management Policy, including prescribed fire when it can be proven to be a natural component of the ecosystem. Livestock grazing manipulation would be allowed as a vegetation treatment provided that it leads to improvement in the natural condition of the area as a whole, and it does not contribute to a decline in the ecological condition of rangeland within the WSA.

IN SUMMARY, actions and activities would not be allowed in WSAs that could impair naturalness values. Acquisition of State trust and private lands, wilderness studies and designations, wild or scenic river studies and designations, vehicle closures and limitations, access development, implementation of wildlife habitat management plans, watershed stabilization, fire management, livestock grazing management, and establishment of instream flows would all benefit wilderness resources and uses by stabilizing soils and improving stability of natural systems.

SPECIAL STATUS SPECIES (T&E)

Plants

Lands identified for disposal in the valley and on the mesa east and west of Las Cruces, include habitat (sand dunes) for the sand prickly pear

cactus. Night-blooming cereus, which is very hard to locate, and grows in creosotebush areas, could also be found in disposal areas. The continued multiple-use management of 2,821,110 acres of public land and the acquisition of private and State trust land would protect special status plants and their habitat as well as bring additional habitats under Federal protection.

SMAAs and ACECs, especially in the Organ Mountains, would provide additional protection and management of all species and their habitat found in these areas. There are at least 24 potential or identified Federal or State listed species in the Organ and Franklin Mountains area. The Sneed's pincushion cactus is found on the south end of the mountain range. Most of the ACECs have been identified for their biological values and several have identified special status plants such as *Atriplex griffithsii*, a saltbush on the Lordsburg Playa. Management plans balancing livestock, wildlife and recreational use would provide long-term protection for these plants and their habitat. All areas would be either closed to vehicle use or limit the use to designated roads and trails which would keep plant theft and damage to the habitat from off-road vehicle use to a minimum. The addition of four areas for wilderness study, by the nature of the limited access and management policy would add a measure of protection to special status plants and their habitat.

Areas designated as open to vehicle use would have a site-specific clearance done before the area was used to avoid impacts to special status plants. Limiting vehicle use to limited or designated roads and trails would limit potential plant theft which is a real problem with special status plants. Special status plant habitat would also be further protected from off-road vehicle use. Closed areas would provide long-term protection for plant species and their habitat.

New access routes could open up new areas to plant collection and habitat loss.

Designation of right-of-way corridors and exclusion/avoidance areas would prevent or keep habitat loss to minimum in those areas.

Mineral actions, withdrawing or closing areas to mineral entry, would provide long-term protection

to special status plants and their habitat. Most of the Resource Area would be open to all forms of mining (except leasables in some SMAs). This could potentially lead to a greater potential for short-term habitat loss. Areas open to leasing would follow the standard procedures for these actions. Long-term loss would be mitigated by the reclamation stipulations but could still occur especially under mining notices (5 acres or less) where BLM has no discretionary authority. Although, the operator is still bound by Section 7 of the Endangered Species Act.

Developed recreation areas would provide special protective measures for special status plants and their habitat in the area. These areas would provide for interpretative and educational awareness of the biological values in the area. Visitors would be limited to specific areas which protects the existing plants and their habitat. The Dripping Springs Natural Area and Aguirre Spring Recreation Area are good examples.

Watershed activity plans would provide for soil stabilization which improves vegetation cover. These plans could indirectly protect existing species and their habitat and provide for future populations.

Vegetation sale areas would have a site-specific clearance done to ensure no special status plants are affected. The desired plant community outlined under this Alternative depends on a significant amount of chemical brush control. The night-blooming cereus, which depends on creosotebush for structural support would be more visible if it occurred in a brush control area. The elimination of livestock grazing on 6,546 acres could add some measure of protection to special status plants and their habitat.

Riparian and arroyo habitats have the majority of special status plants in the Resource Area. The exclusion of grazing and the improved management proposed in ACEC management prescriptions on these areas would enhance and permanently protect species and their habitat.

IN SUMMARY, multiple-use management, retention and acquisition of land, ACECs and SMAs, vehicle use limited to existing or designated roads and trails, SRMAs, watershed management plans, and the elimination of livestock grazing and

riparian and arroyo habitat management would have short- and long-term benefits to special status plants by limiting use, maintaining the BLM mandate of protection and enhancement or avoiding an area all together. Land disposal actions could have short- and long-term impacts from the loss of potential habitat.

Animals

Improved manageability through acquisition and consolidation of lands would provide additional habitat for special status animals as well as provide a buffer around special status habitat. Sensitive species such as desert bighorn sheep and various raptors and reptiles would benefit from these acquisitions.

The development of management prescriptions for 27 ACECs would close these areas to mineral material sales, restrict off-road vehicle and right-of-way activities, require development of livestock grazing activity plans, and revisions of existing Allotment Management Plans. These activities would protect special status species such as desert bighorn sheep, Gila monster, peregrine falcon, spikedeace, and loachminnow and their habitats.

The addition of four areas for wilderness study would help protect animal habitat from disturbance and degradation. The areas for study would help protect habitat for desert bighorn sheep, reptiles such as the Gila monster, raptors, small birds and mammals and two species of fish (spikedace and loachminnow).

The wild and scenic river studies for the Gila River would help protect habitat for special status fish such as the spikedace and loachminnow as well as protect riparian habitat which supports numerous special status raptors, small birds and reptiles.

Areas closed to off-road vehicle use which contain special status animal habitat such as Guadalupe Canyon would prevent habitat degradation and animal disturbance. Limiting off-road vehicle use to designated roads and trails would prevent animal habitat degradation. Use of designated roads and trails in areas with special status animals and habitat could result in habitat degradation and animal population reductions near these roads and trails if excessive use occurs.

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In areas open to fluid mineral leasing with site-specific stipulations, special stipulations such as no surface occupancy and seasonal use restrictions are used to mitigate impacts to special status animals such as the desert bighorn sheep.

Exploration and development of locatable minerals on areas less than 5 acres could result in site-specific habitat degradation and special status animal population reduction from access construction, site levelling, mining, and deposition of tailings (Sandoval 1982; BLM 1986). Activities on 5 acres or more require a plan of operation which would be analyzed by an Environmental Assessment to mitigate the effects of mining activity.

There are two existing SRMAs, the Organ Mountains and the Gila Lower Box, which contain special status animal habitat and seven additional SRMAs would be designated several of which contain special status species (Big Hatchet Mountains, Peloncillo Mountains, and Animas Mountains). Recreation activities in the Organ Mountains are mostly limited to existing and maintained trails and campgrounds. Limited hiking and camping occurs on some existing but unmaintained sites in the Organ Mountains and the Gila Lower Box and would occur in the seven additional SRMAs. Development of primitive camping sites in the Big Hatchet and Peloncillo Mountains may affect desert bighorn sheep depending on the localities selected and amount of prolonged activity. The remainder of the Resource Area is managed for dispersed recreation and is subject to unrestricted hiking and camping. These activities are of short duration and usually occur during hunting seasons. Special status species such as desert bighorn sheep, and their habitat may be subjected to this short-term disturbance.

Continued implementation of the six existing HMPs will provide protection to special status animal habitat, such as desert bighorn sheep, which occur in these areas. Activities which may occur in these areas are generally limited in their scope and extent by existing management guidelines.

Watershed planning on areas which have special status animal habitat (Gila Lower Box and Big Hatchet Mountains) would enhance special status

species habitat because activities such as grazing, mineral development, and recreation would be managed to reduce erosion, and maintain or enhance the vegetation community and diversity.

Elimination of grazing would prevent habitat disturbance for special status animals such as desert bighorn sheep because competition for forage and cover with livestock and habitat degradation would not occur (BLM 1986).

Secured instream flows in the Gila River would protect special status fish habitat (loachminnow and spikedace) (Hubbard, et al. 1985) and enhance riparian habitats which support several special status birds and reptiles.

IN SUMMARY, under this alternative special status animals would benefit from increased land acquisition and ACEC designation and the wild and scenic river study for the Gila River, increased land with off-road vehicle restrictions, and continued management of six existing HMPs because habitat degradation and displacement would not occur. Special status animals would be affected by increased off-road vehicle open areas increased mineral exploration and development activity, and increased recreation activities because habitat degradation and animal displacement could occur.

RIPARIAN AND ARROYO HABITATS

Improved manageability of acquiring lands which contain riparian and arroyo habitats would protect and enhance their values. Activities associated with grazing, mining, and recreation would be managed to provide the least amount of disturbance to the area.

Designation of 27 ACECs would protect and enhance riparian and arroyo habitat resources within these areas by closing the areas to mineral material sales, limiting off-road vehicle and right-of-way activities, developing livestock grazing activity plans and revising existing Area Management Plan.

Special protective measures associated with the wild and scenic river study for the Gila River

would protect and enhance the riparian values on public land along the river. All activities which would impair wild and scenic river qualities would be limited in scope and extent.

Areas closed to off-road vehicle use which contain riparian and arroyo habitat areas would not be subjected to activities which would degrade riparian and arroyo habitat. Areas which contain riparian and arroyo habitats that limit off-road vehicle use to existing roads and trails would be subjected to limited disturbance wherever an existing road or trail crossed one of these areas. However, most off-road vehicle use on these roads and trails would not affect riparian and arroyo habitat areas. Designation of two new off-road vehicle open areas would impact arroyo habitats in these areas because arroyo vegetation would be degraded and erosion could increase.

Designation of right-of-way avoidance areas would not affect, or have limited affects on, riparian and arroyo habitat areas. If a right-of-way is needed through these areas then special stipulations would be required to minimize degradation of these areas. Right-of-way exclusion areas would not be subjected to degradation of riparian and arroyo habitat areas from activities which occur in the installation of utilities within right-of-way corridors.

Within areas open to fluid mineral leasing, there are numerous seeps, springs, and arroyo habitats. Activities associated with the exploration and development of fluid mineral leasing such as access construction, site levelling, drilling, water pollution potential, and utility construction could affect riparian and arroyo habitats. Currently approximately 3 acres per year are affected by fluid mineral leasing activities. Site-specific stipulations for fluid mineral leasing would limit disturbance to riparian and arroyo habitat areas.

Exploration and development of locatable minerals on areas less than 5 acres could result in site-specific habitat degradation from access construction, site levelling, mining, and deposition of tailings. Activities on 5 acres or more require a plan of operation which would be analyzed by an Environmental Assessment to mitigate the effects of mining activity.

Mineral sales which occur in arroyo habitat areas would affect these areas because activities such as construction of access, material removal, and mineral storage would remove vegetation, disturb stream bank and arroyo stabilization, and alter flow of water down the arroyo. Areas closed to mineral material sales would not be subjected to mineral material sales activities which would degrade arroyo habitats.

Management of the two existing SRMAs (Organ Mountains, Gila Lower Box), would continue and there would be seven additional SRMAs designated and the remainder of the Resource Area would be managed for dispersed recreation. Recreation activities (hiking, camping) which could affect riparian and arroyo habitat within the Organ Mountains are limited to designated and maintained trails and campgrounds at Dripping Springs Natural Area and Aguirre Spring Recreation Area.

Recreational activities (hiking, camping) which occur in other areas are usually limited to established but undesignated, unmaintained trails and camping areas. Riparian and arroyo habitat degradation, such as erosion and vegetation loss, may occur where use is concentrated. However, these activities tend to be of short duration (several days a year).

The continued implementation of six existing HMPs and the development of six additional HMPs would provide protection to the riparian and arroyo habitat resource in these areas because activities which may occur would be limited in scope and extent.

Watershed planning would enhance and protect riparian and arroyo habitat resources within these areas. Watershed planning would prevent vegetation ground cover loss, stream bank and arroyo disturbance would be minimized, and erosion would be reduced. Activities such as grazing management, erosion control projects, mineral exploration and development, and recreation would be managed to mitigate disturbance to the resource.

Grazing would be excluded from significant riparian areas such as the Gila Lower Box.

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Riparian and arroyo habitats within these areas would not be impacted by livestock grazing (Elmore and Beschta 1987; Ames 1977). Erosion, stream bank and arroyo habitat channel disturbance may be reduced through increased ground cover. Intensive grazing use causing vegetation depletion in riparian and arroyo habitat areas would not occur.

Secured instream flows for the Gila River would enhance and protect riparian vegetation communities and stabilize stream banks which reduces the impacts of flooding by slowing down water flows which increases sediment deposition and percolation of water into the ground.

IN SUMMARY, under this alternative increased land disposal, increased recreation use, and increased mineral development could degrade arroyo habitat. Riparian and arroyo habitat would receive increased protection from ACEC designations, wild and scenic river study, and wildlife HMP development by protecting vegetation, reducing arroyo channel disturbance, and enhancing riparian values.

SOCIAL AND ECONOMIC CONDITIONS

The land ownership changes under Alternative C would emphasize management efficiency through the elimination of small tracts of public land and consolidation of public land holdings. This alternative would also transfer 69,867 acres of Dona Ana County land into private ownership. This land, located on the East Mesa and West Mesa is considered to have high potential for residential and industrial development. Another 162,843 acres of rangeland would be designated for disposal. These lands are in isolated tracts of 1,280 acres or less and are primarily located in Grant, Luna, and Hidalgo Counties. This land would continue to be used for livestock grazing. A total of 93,530 acres would be designated for acquisition. This land consists of State trust (56,050 acres) and private lands (37,480 acres) located in ACECs and WSAs. There would be a net loss of 139,180 acres of public land. Property tax receipts in Dona Ana county would increase by \$982,622, and PILT (payments-in-lieu-of-taxes) would decrease by \$52,400 for a net revenue increase of \$930,222. In the remainder of the

Resource Area, disposal of 162,843 acres would result in the loss of \$122,132 in PILT revenue, and an increase of \$59,547 in property taxes for a net loss of \$62,586 in property tax revenues. Land acquisitions would result in the loss of \$13,705 in local property tax revenues, this would be replaced by \$66,443 in PILT revenue for a net increase of \$56,442. The areas outside of Dona Ana County would suffer a net loss of \$6,144 in local property tax revenues from the combined effect of land acquisition and disposal. There would be a net increase of \$924,077 in local government revenues in the Mimbres Resource Area as a result of these land exchanges.

One result of these land ownership changes would be to provide non-agricultural land for development in Dona Ana County. Dona Ana County has experienced rapid rates of population growth during the last 20 years. The pace of population growth has caused property values in the irrigated valley lands to increase beyond their value as agricultural land (Prichard 1988). As a result, agricultural land has been developed for residential and industrial uses. Additional land with potential for residential and commercial use would reduce the development pressure on irrigated farmland and allow the area to develop without sacrificing the agricultural sector of the economy.

Land ownership changes outside of the Rio Grande Corridor would not be likely to change land use. The location and physical properties of the land would place limitations on use as residential, agricultural, or commercial property. Private ownership of these lands might encourage more intensive use and development of their potential for livestock grazing. Acquisition of land inside ACECs and WSAs would reduce conflicts over access to inholdings and uses that are not compatible with wilderness or other designations.

There would be a range of public attitudes concerning these land ownership changes. Ranchers may welcome the opportunity to own rangeland, though the costs of ownership would likely be greater than the cost of grazing permits. Local governments would be faced with new planning decisions concerning the use and development of these lands. New opportunities for commercial and residential development would be created. However, there would be concerns for

the protection of resource values on land that is transferred to private ownership.

There would be 27 ACEC designations in Alternative C. This would be an increase of 70,680 acres over Alternative A. Public opinion would be divided over this issue; there are many who would consider Alternative C as providing a minimal amount of protection environmentally sensitive habitats. Those who have economic interests on public land might consider the degree of protection "about right" or perhaps even too restrictive. Four new areas for wilderness study would be added to the 14 existing WSAs, and the Gila Lower Box and Gila Middle Box would be identified as wild and scenic river study areas. These designations would provide economic benefits to local communities as a result of increased tourism. The wild and scenic river study areas could also have an influence on the proposed Hooker Dam on the Gila River.

Changes in stream flow patterns caused by the construction of the dam would have a variety of effects on riparian ecology and on sensitive species found in the Gila River.

Vehicle management under Alternative C would limit vehicle use to existing roads and trails on 92 percent of the Resource Area. There would be 0.6 percent of the Resource Area, designated as open, 5 percent would be limited to designated roads and trails, and 2.5 percent of the Resource Area, would be designated as closed to vehicle use. Although vehicular damage to soils and vegetation would be reduced by these designations, existing users and permittees would be mostly confined to existing routes making some activities such as mineral exploration more difficult.

There would be designated right-of-way exclusion areas, primarily to protect sensitive habitat or visual resources and designated right-of-way avoidance areas. The remainder of the Resource Area would be open to rights-of-way under standard stipulations. These provisions would not be expected to have significant economic effects. There would be social benefits associated with the preservation of visual quality in some of the more scenic areas of the Resource Area.

Alternative C would emphasize acquisition of vehicular access to public land. Access would be

acquired to 24 areas in the Resource Area. This would provide economic benefits to permittees, and to recreational uses of public land by making public land areas more accessible. The access would be acquired through negotiation or exchange with landowners who might benefit from those transactions. There would be increased traffic to formerly remote areas, and possible conflicts with other uses, as well as administrative expense to the BLM as a result of the increased traffic.

Under Alternative C, all land in the Resource Area would be open to locatable mineral entry. This would cause some resource conflicts if minerals claims were to be developed in environmentally sensitive areas. Some possible consequences might include reduction of visual quality, and disturbance to sensitive habitats. Economic benefits from mining would be maximized. There would also be areas closed to mineral material disposal. This would include areas of sensitive habitats and cultural sites. There would be resource conflicts with other uses including livestock grazing, wildlife, and recreation. Dust and traffic might interfere with residential development near urban areas. There would be no areas closed to fluid minerals leasing; some areas would be subject to current site-specific stipulations, while the remainder of the Resource Area would be open to minerals leasing under standard terms and conditions. There could be conflicts over the leasing and development of minerals in ACECs, areas for wilderness study, and SMAs. Energy exploration companies would prefer unlimited vehicular access which could cause conflicts with vehicle use designations. There would be the possibility of discovering and developing new mineral resources.

The increased emphasis on recreation under Alternative C would result in the designation of nine Special Recreation Management Areas, and the development of five primitive campsites, six trails, and six interpretive areas. In addition, there would be plans to acquire four State parks (Rockhound, City of Rocks, Leasburg, and Pancho Villa) in the Resource Area. The development of these facilities would accommodate an estimated 460,000 visitor days and result in estimated gross receipts of \$5.5 million to \$6 million. The BLM would receive approximately \$190,000 in fees for use of these facilities annually. The development

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of these facilities would require an increased level of administration and management. Conflicts with other resources could develop as a result of increased visitor traffic. A broader spectrum of recreational activities would be available to residents of the Resource Area.

Under Alternative C, cultural resource management would continue emphasis on inventory and site protection. There would be development of four interpretive sites. The estimated economic contribution of these sites was included under recreation.

Under Alternative C, slight decreases in deer populations would lead to a decrease in estimated receipts of \$59,605 to local economies.

Watershed management plans would be developed for eight critical watershed areas under Alternative C. While watershed management plans would reduce surface disturbing activities, their potential for conflict with resource uses would not be considered to be economically significant. The Resource Area would benefit from reductions in sedimentation, flooding, and increased riparian stability.

The land disposal area on the East Mesa, near Las Cruces would be designated as a vegetation sale area. This would not be expected to have significant economic effects. A maximum of 10,000 acres of rangeland would be treated per year with controlled burning or chemical treatments to control brush and improve forage production. Treatment costs would range from \$9,600 to \$12,800 per section (640 acres) and produce an annual benefit ranging from \$700 to \$1,300 per section treated. The additional forage production would enhance air and watershed quality by reducing wind and water erosion.

Livestock grazing would be eliminated on 6,546 acres. This is less than .2 percent of the Resource Area, and would result in a loss of 71 AUs and approximately \$20,000 in gross receipts from livestock. There would be a loss of 31,890 AUMs due to land exchanges under Alternative C. This would result in the loss of \$62,823 in grazing fees. Since most of this land would be expected to

remain in its present use, no change in gross receipts from livestock is predicted. There would be a loss of 447 AUs from land exchanges in the areas near Las Cruces. Since land use is expected to be residential or commercial in these areas, a loss of \$10,031 in grazing fees and \$126,948 in gross receipts from livestock is projected.

IN SUMMARY, Alternative C would cause significant changes in land ownership compared to Alternative A. Land under BLM management would be reduced by 139,180 acres. Approximately 70,000 acres, near Las Cruces would have significant value for development as commercial or residential property. This would result in an increase of \$924,000 in tax receipts for the Resource Area. All of the increased revenue would occur in Dona Ana County. The loss of PILT payments due to disposal would not be compensated by increased PILT payments from acquisition and increased tax revenue from disposal in Luna and Grant Counties. These areas would suffer a net loss of \$6,144 in revenues as a result of land ownership adjustments.

Alternative C would place the minimum restrictions on the development of locatable, leasable, and salable minerals. This could be expected to cause an increase in these types of activities in the Resource Area. Resource conflicts would arise as a result of increased development of mineral resources.

There would be a high emphasis on recreation under Alternative C. An increased level of recreational activities would be created for the public, and approximately \$5 million in gross receipts from recreation would be produced. These changes would require a larger commitment of administrative resources from the BLM.

Under Alternative C, slight decreases in deer populations would lead to a decrease in estimated receipts of \$59,605 to local economies.

There would be no significant changes due to SMAs, vehicle management, access acquisition, right-of-way policy, cultural and paleontological resources, vegetation management, or livestock grazing under this alternative.

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MINERALS

Fluid Leasable Minerals

OIL AND GAS

The land identified for disposal has low potential for the occurrence and development of oil and gas so the loss of these fluid minerals from public ownership would be insignificant.

Land identified for the acquisition of vehicular access and land adjacent to these areas has low potential for the occurrence and development of oil and gas. Consequently, new opportunities for exploration on this land would be insignificant.

Table 4-18 lists the acreage of public land that would be available under Alternative D for oil and gas development in comparison to the oil and gas potential.

GEO THERMAL

Land identified for disposal in the vicinity of Las Cruces contains 14,000 acres of high geothermal potential and 19,000 acres of moderate geothermal potential. Respectively, this represents about 24 percent of the total high potential lands and 7 percent of the moderate potential lands. The transfer of these lands out of Federal ownership would preclude the opportunity for public leasing and development of these geothermal resources. Retaining the mineral estate in Federal ownership could lead to potential split-estate conflicts if the surface owner does not concur with geothermal development. However, low-temperature, direct-use geothermal applications such as space heating and domestic hot water heating can be compatible with surface uses.

About 10,000 acres of land in the San Diego Mountain, Dona Ana, Robledo Mountain, and Organ/Franklin Mountain ACECs that have geothermal potential would be closed to leasing. This could result in significant impacts. These areas have moderate to high potential for the

development of low-temperature, direct-use geothermal applications. The Las Cruces vicinity offers a Nationally significant geothermal resource that has prime potential for this type of development. If these areas are not available for leasing, there could be less incentive for aquaculture and greenhouse industries to locate here.

Table 4-19 lists the acreage of public land that would be available for geothermal development compared to the potential for geothermal resources.

Nonenergy Leasable Minerals

About 3,300 acres of land having moderate sodium potential in the Lordsburg Playa ACEC would be unavailable for leasing and development. This would not be expected to result in any significant impacts. Unlike base and precious metals, there are vast quantities of sodium resources elsewhere in the United States.

Table 4-20 lists the acreage of public land that would be available for non-energy leasable mineral development compared to the potential for these resources.

Locatable Minerals

Most of the land identified for disposal has low potential for the occurrence of locatable minerals. There are 1,000 acres of high potential land in the Silver City area and 2,600 acres west of the southern San Andres Mountains that are identified for disposal. However, legal access to the areas near Silver City is limited, so the loss of the public's opportunities for mining would not be significant. The loss of the area near the San Andres Mountains would be more significant because the public currently has good legal access. If the mineral estate is reserved to the United States, there could be conflicts between the surface owner and the mining claimants concerning surface damages.

Land identified for the acquisition of vehicular access and land adjacent to these areas have low

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TABLE 4-18
AVAILABILITY OF LAND FOR OIL AND GAS DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
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	<u>POTENTIAL FOR OCCURRENCE</u>			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	1,936,600	1,595,700	0	3,532,300
Open/Stipulations	152,000	122,000	0	274,000
Open/No Surface Occupancy	55,600	9,400	0	65,000
Not Open to Leasing	181,300	85,700	0	267,000
Nondiscretionary Closure (withdrawals)	168,500	408,900	0	577,400
Total	2,494,000	2,221,700	0	4,715,700

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-19
AVAILABILITY OF LAND FOR GEOTHERMAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
ALTERNATIVE D

	<u>POTENTIAL FOR OCCURRENCE</u>			TOTAL
	LOW	MODERATE	HIGH	
Open/Standard Lease Terms and Conditions	3,236,600	206,200	56,700	3,499,500
Open/Stipulations	239,000	35,000	0	274,000
Open/No Surface Occupancy	64,200	800	0	65,000
Not Open to Leasing	255,600	11,400	0	267,000
Nondiscretionary Closure (withdrawals)	574,700	0	2,700	577,400
Total	4,370,100	253,400	59,400	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-20
 AVAILABILITY OF LAND FOR NONENERGY LEASABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
 (ACRES OF FEDERAL MINERAL ESTATE)*
 ALTERNATIVE D

	POTENTIAL FOR OCCURRENCE			
	LOW	MODERATE	HIGH	TOTAL
Open/Standard Lease Terms and Conditions	3,487,500	12,000	0	3,499,500
Open/Stipulations	274,000	0	0	274,000
Open/No Surface Occupancy	64,500	500	0	65,000
Not Open to Leasing	263,600	3,400	0	267,000
Nondiscretionary Closure (withdrawals)	577,400	0	0	577,400
Total	4,667,000	15,900	0	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

About 3,800 acres of high potential land in the Organ/Franklin Mountain ACEC and 1,500 acres of moderate potential land in the Apache Box ACEC would be unavailable for exploration and development. Respectively, this represents about 7 percent of the total high-potential lands and less than 1 percent of the moderate-potential lands. This would not result in any immediate or short-term impacts. However, there could be long-term, adverse, cumulative impacts if areas like these are removed from public ownership. It is then possible that exploration, development, and production may not occur thus depriving the United States of potential sources of base and precious metals.

Table 4-21 lists the acreage of public land that would be available for locatable mineral development in comparison to locatable mineral potential.

Salable Minerals

About 18,000 acres of land proposed for disposal are located on the Las Cruces East Mesa and have high potential for the development of sand and gravel. This represents about 38 percent of the total high potential sand and gravel between Las Cruces and Anthony. Disposal of these lands

would preclude the extraction of these mineral resources. Retaining the minerals in Federal ownership would not resolve this problem. Potential conflicts that would arise from the split ownership of the surface estate and the mineral estate in any area of city expansion would most likely prevent the extraction of salable minerals.

About 4,000 acres (or 8 percent of the high potential sand and gravel between Las Cruces and Anthony) having high potential for sand and gravel resources would be closed to material sales in the Organ/Franklin Mountains ACEC. These areas along the east side of the Rio Grande Valley southeast of Las Cruces, could provide sources of sand and gravel as Dona Ana County continues to grow.

If these lands are unavailable for development of the sand and gravel resources, there could be significant impacts on the local economy. Sand and gravel are essential in the construction industries associated with the continued growth of an area.

Table 4-22 lists the acreage of public land that would be available for salable mineral development in comparison to salable mineral potential.

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TABLE 4-21
AVAILABILITY OF LAND FOR LOCATABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
ALTERNATIVE D

	<u>POTENTIAL FOR OCCURRENCE</u>			
	LOW	MODERATE	HIGH	TOTAL
Open	3,662,900	278,500	44,800	3,986,200
Closed	55,300	4,900	3,800	64,000
Nondiscretionary Closure (withdrawals)	599,000	30,200	3,500	632,700
Total	4,317,200	313,600	52,100	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

TABLE 4-22
AVAILABILITY OF LAND FOR SALABLE MINERAL DEVELOPMENT RELATIVE TO POTENTIAL
(ACRES OF FEDERAL MINERAL ESTATE)*
ALTERNATIVE D

	<u>POTENTIAL FOR OCCURRENCE</u>			
	LOW	MODERATE	HIGH	TOTAL
Open	3,271,500	184,600	55,600	3,511,700
Closed	308,100	19,200	4,700	332,000
Nondiscretionary Closure (withdrawals)	836,600	0	2,600	839,200
Total	4,416,200	203,800	62,900	4,682,900

Source: BLM Files, 1990.

Note: *Does not include U.S. Forest Service.

IN SUMMARY, land identified for disposal has low potential for the occurrence and development of oil and gas, so the loss of this mineral resource from public ownership would be insignificant.

The Lordsburg Playa ACEC would be closed to leasing and therefore unavailable for potential exploration and development of sodium resources.

The Organ/Franklin Mountains ACEC has high potential for the occurrence of locatable minerals. Closing this area to mining would preclude exploration and development.

Land identified for disposal near Las Cruces has moderate to high potential for geothermal resources. The loss of this mineral resource from public ownership would preclude the opportunity for leasing and development. If the geothermal estate is retained in Federal ownership, development of the geothermal resources could lead to conflicts between the surface owner and geothermal lessee. However, geothermal development can be compatible with surface uses.

Disposal of land near Las Cruces that has high potential for the development of sand and gravel would preclude the development of this mineral resource. Retaining the salable minerals in Federal ownership would lead to potential split estate conflicts because mining of mineral materials is not compatible with surface use.

LANDS

The 158,560 acres of public land identified for disposal under this alternative consists of isolated parcels and small tracts located in Luna, Hidalgo and Grant counties, and lands located in Dona Ana County as identified for disposal in the Southern Rio Grande Plan Amendment and new parcels identified for disposal near La Union, New Mexico. This alternative would allow BLM to dispose of difficult to manage public land in Grant, Hidalgo, and Luna counties that could provide numerous opportunities for the public and provide high valued land in Dona Ana County, mostly near the City of Las Cruces, for the potential growth of the community.

Approximately 93,110 acres of State trust land and 56,214 acres of private land would be acquired under this alternative. These acquisition areas

would be inholdings within existing and proposed ACECs. Consolidation of the public land would significantly improve management efficiency, effectiveness, and costs.

The multiple-use management of approximately 2,895,360 acres of public land would allow BLM to carry out multiple-use management on these lands as well as authorize multiple-use actions providing opportunities for companies and individuals to use public land.

Legal vehicular access to certain public land would enable some applicants to locate site rights-of-way easier and coordinate with only one landowner. Administrative or legal access across private land to public land creates better management conditions for BLM.

Approximately 264,870 acres of exclusion area would be created which would prohibit the issuance of new right-of-way grants, except where existing right-of-way corridors occur. Approximately 783,400 acres would be identified as avoidance areas which would restrict construction and maintenance activities as well as the size and type of actions to be authorized. These designations could make right-of-way construction more difficult and expensive for utility companies. Utility routes may deviate more and therefore require longer rights-of-way, thus increasing the amount of surface disturbance. However, areas open for right-of-way development would be easier to identify.

IN SUMMARY, land ownership adjustments would occur on approximately 5 percent of the public land within the Resource Area. Approximately 149,324 acres of State trust and private inholdings within ACECs would be acquired to improve manageability. Approximately 1,895,360 acres of public land would be managed for multiple-use under BLM administration and open to all applicable public land laws which would provide opportunities for public use. Right-of-way placement would be excluded from 264,870 acres of public land, except in existing right-of-way corridors, and would be restricted on an additional 783,400 acres. Right-of-way exclusion and avoidance areas could present longer routes and more expense for right-of-way applicants. However, areas open for right-of-way development would be easier to identify.

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ACCESS

Under Alternative D, access could be lost to 158,460 acres of public land in Dona Ana, Luna, Grant, and Hidalgo Counties through disposal. Some of these lands are in small, isolated parcels that have no existing legal access to them and are behind locked gates on adjacent private land where they are not currently available for use by anyone but the grazing permittee. Other lands identified for disposal are adjacent to the City of Las Cruces on both the East and West Mesas, and some are adjacent to the Organ and Franklin Mountains. Disposal of land in these areas without specific easement reservation could restrict access to the proposed Organ Mountains National Conservation Area. Reservation of easements would be necessary to maintain existing access across any disposed lands that provide or could provide access routes to other public land or to Forest Service, State trust, or private lands.

Acquisition of State trust and private land would allow BLM to improve access to and across public land in 27 ACECs and other SMAs including areas for wilderness study, the Continental Divide National Scenic Trail, and wild and scenic river inventory units. Accessibility of public land would be improved by improving land ownership patterns in the public land, and reducing land ownership boundaries in those areas that receive the highest levels of public use including most of the mountain ranges from the Organ Mountains to the Arizona border and the Gila Lower Box.

Vehicle closures would curtail vehicular access on 89,180 acres of land along the Mexican border. An additional 37,180 acres in SMAs would be designated as closed to all vehicle use, necessitating any uses of these areas that require vehicular access to either stop or be relocated outside of the closed areas. Foot access would not be impeded in these closed areas, so any uses in these areas that do not require vehicle use would be unaffected. Another 539,640 acres would be designated as limited to designated roads and trails, restricting vehicular access within these areas to existing roads except those roads that may be causing degradation of the resources for which those SMAs are designated, which could be closed or rerouted. Access within two new open areas totalling 16,190 acres would be unrestricted, enhancing vehicular access to lands within and

adjacent to the Aden Hills and the Lordsburg South Playa. Access on the remaining 2,371,630 acres within the Resource Area would be limited to existing roads and trails, maintaining the current level and routes of access to and across 78 percent of the public land in the Resource Area.

Proposal of four new areas for wilderness study would not significantly hinder access to and across public land.

Development of new foot and vehicle access routes would be conducted through road construction across public land and easement acquisition across State trust and private lands. Legal vehicular and foot access would be significantly improved to the Alamo Hueco, Big Hatchet, Burro, Cedar, Cooke's, Florida, Goodsight, Little Hatchet, Organ, Peloncillo, Pyramid, Robledo, Tres Hermanas, Sierra Rica, and West Potrillo Mountains plus Apache Box, the Apache Hills, Bear Creek, the Coyote Hills, Blue Creek, Community Pit #1, the Gila Lower and Middle Boxes, the Sleeping Lady and Rough and Ready Hills, and the San Simon Cienega. Access route development and acquisition would improve the existing network of public land access routes to provide the public with sufficient opportunity to enjoy the full spectrum of public land uses.

Vehicular access would benefit from designation of areas as open to rights-of-way, fluid mineral leasing, locatable mineral entry, and salable mineral development although fewer opportunities for development of access as a result of these activities would be available under this alternative than under Alternative A. Roads developed for mineral activities could provide new access routes for other users of the public land. Right-of-way exclusion areas would not benefit access with new road construction.

IN SUMMARY, disposal of isolated parcels of public land would not significantly deter access to and across public land, while disposal of larger blocks of public land may detract from existing access opportunities if easements aren't reserved on disposed lands, particularly around the Organ and Franklin Mountains. Acquisition of non-Federal inholdings would enhance legal vehicular and foot access to and across ACECs and other SMAs throughout the Resource Area.

Vehicle closures and limitations would limit vehicular access to designated roads and trails within 29 ACECs, and some access routes within these areas would likely be closed to protect sensitive resources. Vehicle closure would end vehicular access south of the Anapra Road and State Road near the Mexican border in Dona Ana and Luna Counties. Vehicle limitations would limit vehicular access to existing roads and trails over most of the Resource Area, but development of access routes including easement acquisition and road construction would enhance opportunities to access most blocked public land areas.

LIVESTOCK GRAZING

The disposal of land through sale or exchange could have a long-term impact on grazing if these lands were eventually developed and fenced out of an allotment. Most affected allotments (Section 15 leases) only contain small isolated parcels of public land. If disposed of, many of these allotments would no longer contain any public land. Under this Alternative, there could be 111 allotments encompassing 7,245 AUs affected (see Table 4-12). The owner of any permanent range improvements would be compensated for the adjusted value of their interest in these range improvements. Setting priority disposal areas on the East Mesa will make grazing management reasonable and possible. If these lands were sold or exchanged to the permittee, grazing would remain the same, but if the land was sold to another interest, grazing use could be lost or grazing patterns substantially changed. There is always an opportunity for a lease agreement between the grazing permittee and landowner granting control of the base property and livestock. Grazing AUs could be reduced if no agreement was reached and the percent Federal Range would change accordingly. The multiple-use management of 2,895,360 acres of public land would allow, continued livestock grazing on the public land. The acquisition of State trust and private lands would block up the public land. Developing and managing grazing activity plans would be easier.

Designation of ACECs could have an impact on livestock grazing in those areas if grazing patterns were altered or livestock excluded. Most of these areas have significant biological or other resource

values. Parts of the ACECs could be fenced to protect these values from grazing use. Livestock grazing would be eliminated or excluded on 8,026 acres within these ACECs. Grazing patterns would change. AUs for the most part would remain the same. These areas are the Central Peloncillo Mountains, Bear Creek, Redrock Game Farm, and part of the Organ Mountains. Grazing activity plans would be developed to minimize conflicts between recreational activities and livestock use. These plans would benefit grazing in the long-term by improving distribution patterns and allowing rest for forage species. Vehicle use would be limited to designated roads and trails which could have a negative impact on grazing practices. Human and livestock interactions would be limited. The designation of four new areas for wilderness study would carry all the standard stipulations. These four new study areas are included in 14 allotments. Range improvement maintenance and development would be more costly, difficult and time consuming. The monitoring of livestock movements, salting and supplementing could also be more difficult. The development and implementation of grazing activity plans, could mitigate most of the impacts to livestock management.

Intensive vehicle use would be expanded to 16,190 acres in two new areas. The allotments which contain these new areas could have more problems with vandalism and livestock harassment. The allotments are Walters (No. 01068); Lunt (No. 01034); Aden Hills (No. 03001); and Corralitos (No. 03013). Having specific areas for intensive vehicle use, should limit the problems in the rest of the Resource Area. Limiting vehicle use to designated or existing roads and trails, limits livestock and human interaction. Because most roads or trails lead to developed improvements, vandalism except during the hunting season remains about the same. The closed vehicle use designation could create problems in range improvement maintenance and development. Monitoring of livestock movement and other activities associated with livestock maintenance especially along the border would be more time consuming.

New access routes would alter livestock patterns as they are developed. Depending on where the new access were developed additional fencing may be needed which would alter livestock patterns

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considerably. These routes could allow livestock to move into areas not previously available. New access could increase the human livestock interaction factor which could lead to increased vandalism and animal harassment.

Designation of right-of-way exclusion areas would prevent the disruption of grazing patterns associated with right-of-way development. Designation of right-of-way avoidance areas would keep livestock disruption to a minimum. Where rights-of-way were granted, there could be an initial disruption in livestock grazing patterns during the construction phase. Patterns would return to normal upon completion of the line or site.

Withdrawals and areas closed to mineral entry for locatables and leasables would eliminate even the short-term impacts to livestock grazing. The rest of the Resource Area would be subject to the standard stipulations. Some disruption in grazing patterns could occur over the short-term. Mineral material sales would continue to cause problems in the allotments they were located in. Grazing use would decrease as the vegetation was removed. Long-term impacts to livestock grazing would be minimal as the animals adapt to the new activity.

Two additional SRMAs would be designated in the Resource Area. These would require recreation or grazing activity plans to mitigate the potential conflict between livestock and recreational users on two allotments. The possibility of livestock and visitor interaction would increase especially in areas more heavily used by livestock as camping and grazing use do not readily coexist.

The development of six new HMPs would benefit livestock and wildlife by identifying conflicts and proposing appropriate measures to remedy these problem areas. All of the new plans would involve species which can coexist with livestock. Additional range improvements may be needed to implement rotational grazing plans. Grazing patterns may need to be changed to provide forage during key periods for both livestock and wildlife. Livestock AUs could be reduced if additional forage needed to meet wildlife population goals could not be derived from chemical treatments or prescribed burns. Bighorn sheep and livestock interactions in the existing HMPs, would continue to be a problem until the two animals are

separated through range improvement development. Livestock grazing patterns would change as a result of these improvements. Coordinated activity plans would aid in the resolution of this problem.

Watershed activity plans on eight critical watershed areas, upon implementation, would improve ground cover and lessen soil loss. Forage would improve for a variety of use including livestock. Distribution of livestock would improve which would improve use patterns. Grazing patterns could be altered and in small areas grazing eliminated as part of these plans.

Vegetation sales of native plants and the new sale area between Deming and Lordsburg would have a small impact on grazing use, most of this associated with increased human activity and some off-road vehicle use. The removal of some yucca plants would have a minimal impact as livestock prefer the stalks in the spring.

The desired plant community under this Alternative, would involve a significant amount of brush treatment by chemical herbicides (for additional information on chemical brush control see the SRG EIS, and Las Cruces/Lordsburg MFPA/EIS). Most of the brush dominated areas would not show a change unless treated with a chemical designed to kill that specific shrub species (such as Spike 20P). Most brush treated areas would change to a grass/forb dominated area in the short-term with shrubs moving back in over time. With proper grazing management, the effects of a brush control, such as increased plant diversity and production, improved ground cover and soil stabilization could last for the long-term. All chemical treated areas are rested from livestock grazing for at least the second and third growing season after treatment. Burn areas are normally rested until regrowth has attained a height of 4 inches on the forage species. Proper use levels on black grama of 40 percent could cause some long-term reduction in livestock AUs (approximately 10 percent). Black grama, a preferred species, is believed to be less drought and grazing tolerant than other native species.

Livestock grazing would be eliminated on 8,026 acres of public land. Most of these areas have been withdrawn from grazing because of significant

riparian, recreational or wildlife values. These areas are the Red Rock Game Farm and Central Peloncillo Mountains for bighorn sheep, Bear Creek for riparian values and part of the Organ Mountains for recreational use.

Riparian and arroyo habitat would continue to attract livestock. The damage from trampling and grazing would be mitigated through a rotational grazing activity plan which takes into account the need of the vegetation, wildlife and livestock. In areas where livestock use is excluded by fencing, additional improvements would be needed to disperse livestock use. Grazing patterns would change. Most of these areas are small so the impacts to livestock would be minimal.

Management for special status species plants is incorporated into the ACEC prescriptions. Livestock grazing may be changed or eliminated in certain areas to ensure a species continued existence.

IN SUMMARY, multiple-use management and acquisition of land, vehicle use limited to existing or designated roads and trails, watershed management plans and desired plant community with chemical herbicides would have short- and long term beneficial impacts on livestock grazing by limiting the interaction between humans and livestock and improving forage conditions. Land disposal, ACECs, elimination of livestock grazing, 40 percent use level on black grama, and riparian and arroyo habitat management would have short- and long-term adverse impacts through the loss of AUs (up to 7,245 AUs from land disposal), and increased livestock and human interaction.

VEGETATION

The disposal of 158,460 acres of public land could impact the vegetation resources in those areas. Lands under BLM jurisdiction are managed and protected under the multiple-use mandate. Disposal lands are usually identified for city expansion. Subsequent development usually requires leveling, clearing and other surface disturbing activities. Most of the identified blocked land is on the East Mesa. Many parcels of land are one section or less in size and are scattered through out the Resource Area but mainly in Grant and Luna Counties. Acquired lands from the State and private sector would come under the

multiple-use and protection mandate. Many of the acquired lands would possess rare or unusual plant communities. The retained lands would remain the same.

The designation of ACECs would provide an extra measure of management and protection to the native vegetation. Many of the ACECs have been identified for biological reasons. All vehicular traffic would be limited to designated roads and trails in these ACECs unless the area is closed to vehicle use. Parking or camping areas have been proposed in some of the ACECs. The removal of vegetation under this Alternative, would be approximately 23 acres. Livestock grazing if permitted, would require a grazing activity plan. Mineral entry opportunities would be severely limited therefore minimizing the loss of the vegetation resource. Interim Management Policy restrictions in four new areas for wilderness study would provide additional protection to the vegetation resources. Vehicle use would be limited to existing roads and trails or closed to vehicle use in designated wilderness areas. The maintenance of vegetation in its natural state is an objective of wilderness management.

There would be 16,190 acres of open off-road vehicle use. While vegetation in these areas could be lost or damaged, the surrounding areas should sustain less abuse from vehicle use. Limiting vehicle use to designated or existing roads and trails would protect the vegetation resource. Closed areas would prevent vegetation resource damage from vehicle use.

Development of new access would cause vegetation loss along the length of the new route. It is anticipated that for each 1 mile of access and acre of land would lose most of it vegetation potential. If the road was not bladed, vegetation would remain between the tire tracks. Vegetation loss would be minimal.

The designation of right-of-way exclusion areas and right-of-way avoidance areas would prevent or greatly limit vegetation disturbance in these areas. Impacts to vegetation species would be short-term. Reseeding and recontouring stipulations would mitigate long-term impacts.

Disturbance to vegetation would be prevented in areas closed to mineral activities. In areas open

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to mineral entry, there would be some initial vegetation loss from exploration and development. These disturbances would be localized (<123 acres per year). All disturbed areas would be recontoured and reseeded. Native plants are made available to the public whenever possible. Successful reclamation is dependent upon climatic conditions.

The designation of two new SRMAs and the accompanying plans which would be developed on these new areas could cause some vegetation loss as recreation sites were developed in the short-term. Long-term benefits to the native vegetation resource could be realized through educational awareness. With visitor use concentrated in "high" impact areas, surrounding vegetation types would receive less human impact.

Six new HMPs would establish vegetation management objectives for wildlife and other uses and outline ways to achieve these objectives. These plans should balance use levels on key species used by wildlife and livestock. Key vegetation species should improve and increase. Project development could cause a loss of several acres of vegetation in the short-term.

Watershed activity plans for eight critical watershed areas would impact the vegetation resource by providing for the stabilization of the soils and reestablishment of native vegetation species. Project development, in the short-term, could cause a loss of several acres of native vegetation.

Vegetation sales of native plants in the existing areas and the establishment of a new sale area between Lordsburg and Deming would cause minimal damage to the vegetative resource. Yucca, ocotillo and desert willow are the species identified for the new area. Some off-road vehicle use is required. The desired plant community concept, under this Alternative, would be to chemically treat brush dominated areas with herbicides (for additional information see the SRG EIS and Las Cruces/Lordsburg MFPA/EIS). Most of the brush dominated areas would not show a change unless treated with a prescribed herbicide such as Spike 20P. It is expected that brush treated areas on approximately 1 million acres would change to a grass and forb dominated area in the short-term with shrubs moving back in over

time. Prescribed grazing management could prolong the effects of a brush control, such as increased plant diversity and production, improved ground cover and soil stabilization. Snakeweed, which responds more to climatic changes than chemical treatment would be burned and not chemically treated under this Alternative. Prescribed and natural fire would be used to treat other areas. The areas which are expected to respond to a fire are mixed desert shrub greater than 10 percent slope, mountain brush areas, snakeweed types and grass bottomlands. Brush invasion in the grass bottomland would be retarded with prescribed fires. Areas presently dominated by brush species do not allow for much species diversity and in many cases contribute to soil loss.

Setting the maximum use level on black grama of 40 percent would give this forage species an extra measure of long-term protection. The long-term survival of black grama could be jeopardized as the plant appears to be less drought and grazing tolerant than other forage species. Black grama is a preferred species. Other associated species would benefit as their use levels, in most cases, would be less than black grama. Eliminating livestock grazing on 8,026 acres would protect forage species from livestock overuse and may permit improvement of vegetation conditions in some areas. The benefits which can be associated with proper grazing management such as old growth removal and plant stimulation would not be realized.

Riparian and arroyo habitats under this Alternative would require a grazing activity plan for each area. Most surface disturbing activities would occur outside these zones. All of the areas would be closed to vehicle use or limited to designated roads and trails. Visitor use would be directed away from most riparian areas. All of these measures would help in the long and short-term reestablishment of riparian vegetation.

IN SUMMARY, beneficial impacts to vegetation resources due to the BLM's mandate to manage public land or because areas have been withdrawn or have limited uses assigned to them would occur from multiple-use management and acquisition of lands, ACECs, vehicle use limited to designated or existing roads and trails, watershed management plans, desired plant community objectives, 40

percent use on black grama, and the elimination of livestock grazing. As a result of meeting desired plant community objectives and land treatments, vegetation diversity and ground cover would be improved on approximately 1 million acres. The disposal of public land, would have short- and long-term negative impacts from potential vegetation loss.

SOIL/AIR/WATER

Soil

Under this alternative, lands identified for disposal are significantly greater than in Alternative A and would be the responsibility of State and local governments. More acres could be subject to soil disturbance. Lands near urban centers could be subjected to clearing, levelling, and construction activities. Any soil loss from accelerated erosion would be irretrievable. Lands away from urban centers could be subjected to unregulated surface activities such as grazing, mining, and recreation use. Most of the lands subject to these activities would be on the East and West Mesas near Las Cruces. Improved manageability through acquisition and blocking up of lands would protect the soil resource because activities on these lands would be regulated and limited in their scope and extent.

The designation of 27 ACECs is a significant increase over Alternative A. ACEC management prescriptions would close these areas to mineral material sales, fluid mineral leasing, and in some cases close locatable mineral entry, limit or exclude off-road vehicle use, exclude authorizations for rights-of-way, and develop or revise Area Management Plans. These prescriptions would prevent soil surface disturbance and vegetation loss. Approximately 28 acres would be subject to soil disturbance from fence construction, parking area and primitive campground development.

Off-road vehicle closures would be nearly 10 times as great as in Alternative A. This would provide greater protection to the soil resource from soil disturbance and vegetation loss. Limiting off-road vehicle use to existing or designated roads and trails over most of the Resource Area, would provide about six times more area than in Alternative A. This would provide greater

protection to the soil resource because soil surface disturbance and vegetation loss would not extend beyond existing or designated roads and trails. Areas open to off-road vehicle use, compared to Alternative A, would result in a greater area subjected to soil surface disturbance, compaction and vegetation loss.

Developing new access into 19 areas could involve surface disturbing activities such as road construction. New road construction could increase the soil susceptibility to wind and water erosion at least during construction activities.

Designation of right-of-way avoidance areas would impact the soil resource because if rights-of-way must be located in these areas they would be subject to special stipulations to minimize affects from construction activities. Designation of right-of-way exclusion areas would impact the soil resource because activities associated with the right-of-way would not occur in these areas. Designation of areas open to rights-of-way (subject to standard stipulations) would be affected by surface soil disturbance activities such as construction, maintenance and continued use of the right-of-way by vehicles.

Exploration and development of fluid minerals on lands which are open to leasing (subject to standard stipulations) would affect the soil resource by disturbing surface soil near exploration sites by activities such as construction of access, drilling, site clearing and in the case of development, installation of utilities, structures and additional access if needed. The soil resource on areas closed to fluid mineral leasing would not be impacted by activities associated with fluid mineral exploration and development.

Activities on areas open to locatable mineral entry would result in site-specific soil disturbance from drilling, trenching, mining, construction of access roads, clearing of sites, and deposition of tailings from mines. Areas closed to locatable mineral entry would not be subjected to soil disturbance from locatable mineral activities.

Areas open to salable mineral disposal (subject to standard stipulations) would result in the removal of the soil surface, construction of access roads, clearing and levelling of sites for equipment and salable material storage. Areas closed to salable

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mineral disposal would not be subjected to soil disturbance from salable material disposal activities. There would be considerably less impacts to soils compared to Alternative A where the entire Resource Area would remain open to mineral sales.

The two existing SRMAs, the Organ Mountains and Gila Lower Box, would continue. Two additional SRMAs (Dona Ana Mountains and Fort Cummings) would be designated, and the remainder of the Resource Area would be managed primarily for dispersed recreation opportunities. In the Organ Mountains SRMA, activities which may impact the soil resource (hiking and camping) by causing erosion and soil compaction, are limited to designated and maintained trails and campgrounds at Aguirre Spring Recreation Area and designated and maintained trails at Dripping Springs Natural Area and established but unmaintained trails throughout the remainder of the SRMA. The Gila Lower Box SRMA and the two additional SRMAs are subject to unrestricted hiking and camping. Soil erosion and compaction may occur where unmaintained trails and campsites are found. Since most of these activities are widely dispersed, impacts are most likely to occur where use is concentrated (such as hunting camps). However, these activities tend to be of short duration.

Implementation of the existing six habitat management plans and development of six additional habitat management plans would provide protection to the soil resource in these areas because activities which may occur in these areas are generally limited in scope and extent by existing management guidelines. Impacts to the soil surface from habitat development projects would be limited and would not be permanent.

Developing watershed plans on eight areas acres would improve, protect, and enhance the soil resource by improving vegetation ground cover, reducing erosion, and reducing runoff while increasing percolation of water into the ground. These results would be realized by improving grazing practices, restricting off-road vehicle, mining, and recreation activities on these areas.

Soil surface disturbances in the five existing vegetation sale areas in Dona Ana County and the addition of a vegetation sale area near Deming

would be limited to specific sites where digging of individual plants occurs and where off-road vehicles are used within these sale areas.

Vegetation treatments would include such methods as prescribed fire and chemical brush control in conjunction with proper grazing methods. Prescribed fires could cause short-term soil erosion because vegetation cover would be temporarily removed (regrowth would occur in 1 to 2 years). Hot spots in fires can alter physical soil surface properties by reducing organic matter, decreasing nitrogen content and reducing soil microbes (Wright and Bailey 1982). These alterations are not permanent and recovery occurs with revegetation of the area. Increased vegetation ground cover would result in long-term improved watershed conditions. Improved grazing management would benefit the soil resource through increased herbaceous ground cover, and reduced impacts from cattle trails and sacrifice areas near water.

The exclusion of grazing would eliminate impacts associated with grazing such as trailing and trampling. Erosion may be reduced through increased ground cover, erosion and compaction from cattle trails to and from water would be eliminated, and sacrifice areas near water sources would not exist after a period of recovery.

Secured instream flows would benefit the soil resource because water levels within stream channels would be maintained allowing streamside vegetation to increase resulting in stable stream banks and dense ground cover to trap silt carried by flood waters.

IN SUMMARY, under this alternative, impacts to the soil resource would be limited to site-specific activities on fewer acres than Alternative A. Acres withdrawn from some mineral, grazing, and off-road vehicle activities would be increased and a significant number of acres would be managed for recreation, wildlife, and watershed values which would improve watershed conditions and decrease erosion.

Air

Lands identified for disposal could be subjected to activities which could affect air quality, such as clearing, construction, and sand and gravel

operations which could increase dust levels in and near the areas of activity during construction phases. These lands are primarily on the East and West Mesas near Las Cruces and acreages are significantly greater than the proposal under Alternative A. Lands identified for disposal would not be managed by the BLM. Restrictions on activities would be the responsibility of State and local governments. Acquisition and consolidation of lands would maintain or improve air quality because activities on these lands would be limited in scope and extent.

Development of management prescription for 27 ACECs would help maintain air quality over these areas. Closure of the areas to mineral material sales, fluid mineral leasing, and in some cases closed to locatable mineral entry, off-road vehicle use excluded or limited, and right-of-way authorizations excluded would protect air quality by reducing the amount of dust in the air usually caused by these activities.

Proposal of four new areas for wilderness study would help maintain air quality over these areas because under Interim Management Policy guidelines activities within these areas are limited in scope and extent.

Under this alternative, areas closed to off-road vehicle use compared to Alternative A would maintain air quality over a greater area. Off-road vehicle activity degrades vegetation, and disturbs the soil surface which would increase wind erosion and dust content of the air. Areas limited to off-road vehicle use would help maintain air quality because off-road vehicle use would be limited to existing roads and trails. Areas without existing roads and trails would not be disturbed and air quality away from these roads and trails would not degrade. Under this alternative, there is a significant increase in lands with limited use compared to Alternative A. Areas open to off-road vehicle use, compared to Alternative A, would result in a greater area subjected to vegetation degradation and soil disturbance. Wind erosion would continue to add dust to the air in these areas.

Developing access to 19 areas would reduce air quality during construction and increased use of new and existing roads. Air quality would be

reduced from dust content in the air near these areas.

Designation of right-of-way avoidance areas would help maintain air quality because rights-of-way would not be allowed in these areas without special stipulations. Designation of right-of-way exclusion areas would help maintain air quality because soil disturbances and vegetation loss associated with right-of-way activities would not occur. Activities in areas open to (subject to standard stipulations) right-of-way could continue to reduce air quality from construction and vehicle activities over the immediate area. Most air quality reduction occurs during construction maintenance activities.

Activities in areas open to fluid mineral leasing would affect air quality during exploration and development of these resources. Activities such as access, construction, and site preparation during exploration would increase dust levels. Development activities such as access construction, site preparation, utilities construction, would reduce air quality over the area of development. Areas closed to fluid minerals leasing would not be subjected to air quality reduction from fluid mineral leasing activities. Activities in areas open to fluid mineral leasing with site-specific stipulations would not greatly affect air quality. Type of activities would be limited in scope and extent.

Areas open to locatable mineral entry would be subjected to air quality reduction from activities such as construction of access, digging, and exposure of disturbed soil and tailings to wind erosion. Areas closed to locatable mineral entry would not be subjected to soil disturbing activities which would reduce air quality from dust.

Areas open to mineral material disposal would be subjected to air quality reduction, in localized areas, from dust caused by construction and use of access, removal of vegetation, disturbance of topsoil, and exposure to wind which would carry the dust to other locals. Areas closed to mineral material disposal would not be subjected to air quality reduction caused by mineral material disposal activities.

Watershed planning on eight areas would help maintain air quality over these areas through

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management practices such as improved grazing practices and restrictions on mining, off-road vehicle, and recreation activities. Watershed planning maintains or increases ground cover and reduces soil disturbance.

Vegetation treatments such as prescribed fire and chemical brush control in conjunction with proper grazing practices would be used on up to 10,000 acres/year. Prescribed burning would have short-term effects on air quality from smoke (1 to 3 days).

IN SUMMARY, under this alternative, ACEC designations, watershed planning, wildlife habitat planning, off-road vehicle designation, restriction for rights-of-way, and vegetation treatments would reduce the amount of dust which enters the air by protecting and enhancing surface vegetation and reducing soil surface disturbance.

Water

Lands identified for disposal would not be managed by BLM and an indirect effect of disposal could be urbanization which would be under the control of State and local authorities. The amount of land identified for disposal under this alternative is significantly greater than the acreage identified in Alternative A. Most lands are on the East and West Mesas near Las Cruces with scattered parcels in Grant and Luna Counties. Acquisition and consolidation of land would help maintain water quality because activities on these lands could be managed to protect the resource and would be limited in scope and extent.

The development of management prescriptions for 27 ACECs would protect and enhance surface and ground water resources on these lands. Prescriptions such as closure to mineral material and fluid leasing activities, and in some cases closure to locatable mineral entry, and development or revision of Area Management Plans would protect or enhance surface vegetation, reduce erosion, and increase percolation of water into the ground.

Special actions to protect values identified in the wild and scenic river study for portions of the Gila River which are on public land would limit activities and would provide management to protect and enhance wild and scenic river values

such as scenic quality, wildlife and fish, recreation, geology and cultural.

Under this alternative, there would be more areas closed to off-road vehicle use than under Alternative A. Fewer areas would be subjected to vegetation loss or soil surface disturbance, resulting in decreased water erosion of exposed soil and increased water percolation into the ground would not be reduced. Under this alternative, areas with limited off-road vehicle use to existing or designated roads and trails is significantly higher than the area proposed in Alternative A. Where off-road vehicle use is limited to existing or designated roads and trails, this would protect water resources because surface disturbance and vegetation loss would not extend beyond the existing or designated roads and trails over a greater area as it could Alternative A. Areas open to off-road vehicle use compared to Alternative A would result in increased soil disturbance, vegetation loss, and erosion.

Watershed planning on approximately would provide management for land which is subject to excessive water erosion. Activities associated with grazing, mining, recreation, and off-road vehicle use would be managed to improve grazing practices and limit or mitigate mining, recreation and off-road vehicle uses.

Vegetation treatments would consist of prescribed fire and chemical brush control in conjunction with proper grazing practices. Prescribed fires stimulate vegetation growth and increase ground cover which would reduce erosion and increase percolation of water into the ground (Wright and Bailey 1982). There may be a short-term increase in runoff (1 to 3 years) until the area revegetates and ground cover is re-established. Chemical brush control could improve vegetation ground cover, over a period of 1 to 3 years, resulting in decreased erosion and increased percolation of water into the ground.

Exclusion of grazing could increase vegetation ground cover which would reduce runoff and increase percolation of water into the ground.

Secured instream flows for the Gila Lower Box and Gila Middle Box would enhance riparian vegetation communities and stabilize stream banks, which reduces the impacts of flooding by slowing

down water flows which allows for increased percolation and sediment collection.

IN SUMMARY, under this alternative planned actions would protect water resources by designating 27 areas as ACECs, interim management of four areas of wilderness study, increased acres of closed and limited off-road vehicle use, watershed planning and vegetation treatments. These actions would enhance or protect surface vegetation, reduce runoff and water erosion of exposed soil, and increase percolation of water into the ground.

WILDLIFE

Under this alternative, there is about twice the area identified for disposal compared to Alternative A. Most of the lands identified for disposal are on the East and West Mesas near Las Cruces. Lands near urban areas could be subjected to development activities which could degrade habitat and reduce wildlife populations such as small mammals, birds, and reptiles. Disposed lands away from urban areas could also be subjected to unregulated activities such as increased grazing, mining, and recreation, which could degrade habitat and displace wildlife. Improved manageability through acquisition and blocking up of lands would benefit wildlife because they may contain additional habitat and possible sensitive habitat for wildlife. Additionally these acquired lands could serve as a buffer for sensitive habitats.

Development of management prescriptions for 27 ACECs would benefit wildlife. Prescriptions such as closure to mineral activities, limited off-road vehicle use, and development or revision of Area Management Plans would prevent wildlife habitat degradation and animal displacement. The proposed ACEC designations under this alternative are a significant increase over Alternative A.

The addition of four areas for wilderness study and their interim management would help protect and enhance wildlife habitat because activities on these wilderness study areas would be limited in scope and extent. Management of these wilderness study areas may not allow for certain wildlife habitat improvement projects to occur.

Wild and scenic river study for the Gila Lower Box and Gila Middle Box would help protect and enhance riparian wildlife habitat which is found along the river and free flow of water would maintain habitat for fish species (Hubbard, et al. 1985). All activities which could affect wild and scenic river qualities would be limited in scope and extent.

Under this alternative, the area closed to off-road vehicle use would be greater than in Alternative A. These lands would not be subjected to habitat degradation from vegetation loss and soil disturbance. Less disturbance to wildlife would also occur. Limiting off-road vehicle use to designated and existing roads and trails compared to Alternative A, would prevent habitat degradation and wildlife disturbances from areas that are currently undesignated. Some degradation may occur near these roads and trails. Areas open to off-road vehicle use, compared to Alternative A, would increase acreage that would be subjected to habitat degradation and wildlife disturbance (Bury, et al. 1977).

Developing access into 19 additional areas could involve surface disturbing activities such as road construction. New construction could be subject to special stipulations to minimize affects from construction activities.

Designation of right-of-way avoidance areas would prevent or minimize disturbances to wildlife and wildlife habitat. If a right-of-way is needed through these lands then stipulations would be required to minimize habitat degradation. Right-of-way exclusion areas would not be subjected to activities which would degrade habitat or displace wildlife. Areas open to right-of-way (subject to standard stipulations) would be subjected to habitat degradation and wildlife disturbance from activities associated with installation of utilities and vehicle use along the right-of-way.

Land open to fluid mineral leasing activities would affect wildlife by site-specific habitat degradation and wildlife disturbances during exploration activities such as access construction and drilling. Prolonged development of fluid minerals resources would degrade habitat and reduce wildlife populations from larger areas which include

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developed fields, access, and utilities such as pipelines. Areas closed to fluid mineral leasing would not be subjected to fluid mineral leasing activities which would degrade habitat. Designation of areas open to fluid mineral leasing with site specific stipulations would limit or reduce impacts to wildlife and wildlife habitat.

Activities in areas open to locatable mineral entry would involve access construction, drilling, site levelling and clearing for storage of equipment, minerals and tailings would degrade habitat and reduce wildlife populations from the areas of activity. Effects from exploration activities would be short-term while the development of mines would have long-term effects. Areas withdrawn from locatable mineral entry, compared to Alternative A, would not be subjected to exploration and development activities which would degrade habitat.

Extraction of salable mineral materials results in the removal of surface vegetation and soil surface, construction of access roads, and clearing and levelling of a site for storage and placement of equipment and mineral material. These activities would degrade habitat. Areas closed to mineral material disposal would not be subjected to mineral disposal activities which would degrade habitat and displace wildlife.

Continued implementation of six existing HMPs, and the development of six additional HMPs would benefit wildlife by protecting and enhancing wildlife habitat in these areas. At present, these areas have an estimated population of 1,680 deer, 60 to 80 desert bighorn sheep, and 500 antelope (most of which occur on private or State trust lands). Proposed minimum population levels in these existing and proposed HMP areas would result in an increase of 2,270 deer, a 58 percent increase over present, 1,170 desert bighorn sheep, and 300 antelope occurring primarily on public land.

Development of watershed plans for eight critical watershed areas would protect and enhance wildlife habitat components (vegetation and soil) by management activities such as erosion control projects, grazing management, and recreation management.

Vegetation treatments would consist of prescribed fire and chemical brush control in conjunction with proper grazing practices. Prescribed fire projects would affect wildlife by altering habitat. Habitat improvements realized from prescribed fires on fire dependant vegetation communities are increased browse and forage, increased habitat diversity, and a continuation of natural vegetation community development (Wright and Bailey 1982). Chemical brush control would increase forage and improve habitat diversity.

Exclusion of grazing would reduce competition between livestock and wildlife (where it occurs) in key habitats (particularly for desert bighorn sheep) for forage, cover and space (Sandoval 1982; BLM 1986).

IN SUMMARY, under this alternative wildlife would benefit from increased acreage withdrawn from mineral activity, elimination of grazing on key habitat areas, extensive off-road vehicle limitations, watershed planning, vegetation treatments and increased number of ACEC designations. These actions would protect or enhance habitat and prevent habitat degradation.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Acquisition or disposal of land can cause varied impacts to cultural resources. For example, acquisition of a significant Apachean site or Paleoindian camp or kill site would enhance the diversity of sites within the Mimbres Resource Area since few sites of this type are currently documented. Conversely, disposal of sites of this type would reduce site diversity on the Mimbres Resource Area.

Acquisition of lands which contain significant sites such as Fort Cummings and Los Tules would facilitate cultural resource goals. Under this alternative, some private land within the cultural ACECs would be acquired. At Cooke's Range ACEC, acquisition of the private 40-acre portion of Fort Cummings would facilitate the development of the Fort as a recreation/

interpretive site. Acquisition of the private 10-acre portion of the Los Tules site would enhance preservation efforts for the entire site area.

Impacts to cultural resources eligible to the National Register of Historic Places located within lands identified for disposal are mitigated through excavation and other methods. These mitigative efforts result in determinations of "no adverse effect through data recovery." However, these data recovery methods treat only portions of sites and some data is lost. In addition, modern excavation techniques will be considered primitive by future researchers.

Through ACEC designation, cultural resource sites and areas significant on a National level could be given special management attention to protect the cultural values resulting in additional protection of the resources. ACEC management prescriptions would provide for phased, long-term protective actions for the affected sites.

Under this alternative, 27 areas would be designated as ACECs. Ten ACECs (Alamo Hueco Mountains, Apache Box, Cooke's Range, Dona Ana Mountains, Los Tules, Old Town, Rincon, Organ/Franklin Mountains, San Diego Mountain, and Paleozoic Trackways) have significant cultural or paleontological resource values. Significant prehistoric rock art (petroglyphs) would be protected at Dona Ana Mountains, Rincon, Cooke's Range, and San Diego Mountain ACECs. In the Alamo Hueco Mountains, rockshelters and open sites representative of the Archaic through Apachean periods would be offered additional protection. Prehistoric rockshelter habitation sites would be protected within Apache Box. In Cooke's Range and Fort Cummings, historic mining sites and prehistoric open sites would receive additional protection. The significant Mogollon pithouse village of Los Tules and the large Mimbres village of Old Town would also be protected. In the Organ/Franklin Mountains, historic mining and resort sites would be protected.

Also, open sites and rockshelters representative of habitation sites of the Archaic through Apache periods would be offered additional protection. The Paleozoic Trackways ACEC includes an internationally significant 280-million-year-old amphibian and reptile trackway site.

Under this alternative, the Butterfield Trail and associated stage stations would be designated a SMA resulting in specific management prescriptions for the preservation, protection, and public interpretation of the trail.

Closing or limiting off-road vehicle travel would impact cultural resources within the closure areas. Designating public land open to off-road vehicle travel could affect cultural sites where future off-road vehicle travel may occur. Increased unauthorized collection and vandalism would be expected to occur in the new open areas. The acquisition of legal public access in the Cooke's Range would result in increased vandalism to historic mining sites and prehistoric sites located beyond the existing locked gates.

Encouraging the use of right-of-way corridors would lessen affects on cultural resources by concentrating major rights-of-way in specific areas. Avoiding cultural ACECs with rights-of-way would result in reduced ground disturbances and visual intrusions to cultural resources within the ACECs.

The withdrawal from locatable mineral entry would result in additional protection of cultural resources located within four ACECs. Apache Box ACEC is known to contain several rockshelter habitation sites. Cooke's Peak ACEC contains the remains of historic mining sites. Archaic and Mogollon period sites, as well as possible Apachean sites. The Organ/Franklin ACEC contains rockshelter habitation sites, historic mining sites, Archaic and Mogollon open sites. The Paleozoic Trackways ACEC includes internationally significant 280-million-year-old amphibian and reptile trackways.

Mining activity usually results in more access roads and therefore easier access to cultural sites by the general public and miners. Easier access to cultural sites usually results in vandalism of unprotected sites. Ground disturbance related to mining activity that can affect cultural resources includes, but is not limited to, blasting, construction of new access roads, creation of staging areas, core drilling, and trenching with heavy machinery. Any degradation of cultural resources would result in irreversible and irretrievable losses of information.

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The effects of vegetation use through livestock grazing are generally low-level, except where conditions combine to concentrate cattle. Proximity to water, certain types of forage, natural barriers, or fences can result in channeling cattle to result in intensive trampling of artifacts and archaeological features, as well as increased site erosion. Eliminating livestock grazing by the construction of enclosures reduces these impacts.

Under this alternative, the Old Town Site, Fort Cummings, and the Dripping Springs Natural Area would be excluded from livestock grazing which would reduce cattle trampling of these sites. Class III cultural inventories would be conducted at Fort Cummings, San Diego Mountain, Pony Hills, and Rincon ACECs. These inventories would result in the location, identification, and description of archaeological sites which would allow for more intensive protection and management efforts at these sites.

Historic trails and roads within the Mimbres Resource Area such as the Camino Real, Santa Rita Copper Trail, Spanish exploration routes, and historic emigrant wagon roads would be researched and provide a basis for more intensive management and interpretation of these resources.

Historic mining towns and features at the Cooke, Jose, Stephenson-Bennett, Modoc, Tres Hermanas, Pyramids, Pino Altos, Peloncillos, Floridas, and Carlisle/Summit would be subjected to historic field and records research resulting in more detailed knowledge of the historical significance of these sites. This additional research would lead to better interpretation of the sites to the general public. Archaeological field schools would be initiated or continued at several sites including Old Town, Bruton Bead, Indian Basin, East Potrillo, South Florida, and Camp Cody. These field schools would help establish the significance and research potential of these sites and enhance BLM's abilities to properly manage these localities. This research would result in better communication with the public and greater interpretation of the resources to the public.

Public access to important rockshelter sites such as Apache Box would be restricted through the use of metal grates over some of the shelter openings. In addition, these sites would be subjected to increased patrols and monitoring

which would provide greater security and protection.

An effort to acquire significant Butterfield Stage Sites would be initiated which would result in the protection, stabilization, and public interpretation of these important sites. Old Town and Pony Hills would be intensively managed in accordance with the provisions of the Mimbres Culture Study legislation, and the BLM portion of the Redrock Cemetery Site would be transferred to the National Park Service. These actions would result in reduced vandalism at the sites and enhanced public interpretation.

The Paleozoic Trackways Site would be intensively managed in accordance with the provisions of the Paleozoic Trackways Study legislation. This would result in greater protection and monitoring at the site and possibly the construction of an interpretive center. Environmental education would be stressed at the Center. In addition, paleontological surveys would be initiated in the Robledo Mountains, Aden Lava Flow, and Alamo Hueco Mountains. These surveys could result in the identification of new paleontological localities. This identification would result in new research at these sites and greater protection through monitoring and patrol. These discoveries would also enhance the BLM's public education efforts regarding paleontological resources in New Mexico.

Protection of riparian areas reduces erosion at cultural sites. Riparian areas typically have high concentrations of historic and prehistoric sites.

IN SUMMARY, under this alternative, State trust and private lands would be identified for acquisition. Additional cultural resources located on these lands would come under BLM administration and protection. Nine ACECs with cultural resource values would be designated resulting in implementable management prescriptions for these resources. Under Alternative D, most of the Mimbres Resource Area would be designated either limited or closed to off-road vehicle use. These designations would limit public access to unprotected cultural resources and decrease damage and vandalism associated with increased public access. The acquisition of legal public access in the Cooke's Range would result in increased vandalism to cultural resources located beyond the existing

locked gates. Encouraging the use of right-of-way corridors would reduce ground disturbance and visual intrusions of cultural resources. Closing portions of the Mimbres Resource Area to mineral entry, mineral disposal, and fluid leasing would reduce the number of new access roads and result in decreased vandalism and damage to cultural resources within those areas. Reduction of soil erosion in riparian areas would reduce damage through erosion to the associated cultural resources located in and near riparian areas.

RECREATION

Disposal of public land would reduce the amount of public land in the Resource Area by 5 percent, although there would not be a significant reduction in recreation opportunities in much of the Resource Area because isolated parcels of disposal lands are currently inaccessible to recreationists. The expansion of the proposed Organ Mountains National Conservation Area would reduce the loss of dispersed recreation opportunities on the East Mesa under this alternative as compared to Alternative A. However, disposal of public land adjacent to the City of Las Cruces would reduce opportunities for walking, hunting, shooting, mountain biking, and other recreation uses. Urbanization of some of these disposed lands would create new opportunities for developed recreation in parks, schoolyards, road biking, and other urban uses. Access acquisition and construction to other well-blocked public land in the Resource Area would more than compensate for a 5 percent decrease in public land acreage. Acquisition of State trust and private land would effectively negate any significant loss in land available for recreation in the Resource Area.

Acquisition of lands in ACECs and other SMAs throughout the Resource Area would improve recreation opportunities in those areas by improving public land patterns and reducing conflicts associated with land ownership boundaries. Recreation on those lands would not differ significantly from that on existing adjacent public land, but legal public access to those areas for recreation would improve while the potential for conflicting development would greatly diminish. The natural character of acquired lands would be protected, enhancing most dispersed outdoor recreation opportunities in which quality

is generally enhanced by a lack of human development and disturbance. Acquisition would also enable BLM to provide facilities for developed recreation, such as parking lots and trailheads.

Dispersed recreation opportunities for which quality is enhanced by increased naturalness in the setting such as hunting, hiking, and picnicking would benefit from vehicle closures or limitations (99.5 percent of the Resource Area) including ACECs. ACEC designation would restrict vehicular recreation in some areas to protect fragile riparian, scenic, cultural, endangered species, and other resources. Vehicular access for other forms of recreation would not be significantly affected by wilderness study area and ACEC designations.

Acquisition of lands and development of a Continental Divide National Scenic Trail route from the Burro Mountains through the Cedar, Little Hatchet, Big Hatchet, and Alamo Hueco Mountains would enhance opportunities for long distance hiking both locally and nationally, as this segment would complete the Continental Divide National Scenic Trail as a designated route from Mexico to Canada. Such designation would also enhance opportunities for other primitive and unconfined types of recreation by improving foot access to and across public lands near the trail, and by protecting scenic quality with a right-of-way avoidance area.

Development of access routes would enhance the public's ability to enjoy outdoor recreation throughout the Resource Area for dispersed types of recreation including hunting, rockhounding, hiking, and birdwatching. Enhancement of these opportunities would be provided throughout the Resource Area in areas where public land is well-blocked and recreation access is desired by the public. Recreation users would also benefit from access development to across public land as additional County, State, and Federal roads are built.

Vehicle recreation would be greatly enhanced by the development of new right-of-way routes, livestock development, and exploration and development routes associated with leasable, salable, and locatable minerals. Access development would also provide significant

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impacts to opportunities for other types of recreation as new routes for vehicular access to and across public land allow recreationists to conduct their myriad recreation uses on most public land in the Resource Area. New rights-of-way would be excluded from 264,870 acres and avoided in 818,770 acres, and new vehicular access routes for recreation would not be likely to occur in these 1,083,640 acres as a result of right-of-way development. New vehicular recreation and access routes most likely would be established as a result of right-of-way activities in the intermountain desert areas that cover most of the Resource Area, while construction of roads and land acquisition would provide access over most of the remainder of the Resource Area.

Primitive recreation opportunities within right-of-way avoidance and exclusion areas, areas closed to fluid mineral leasing, closed to mineral disposal, and closed to locatable mineral entry would be enhanced by the maintenance of pristine conditions and the lack of disrupting activities that could degrade the natural quality of outdoor experiences on public land.

Development of new campgrounds in the Dona Ana Mountains and the Gila Lower Box would expand opportunities for developed recreation in the Resource Area by up to 50 percent. Management of the Gila Lower Box and the Organ Mountains under their respective Coordinated Resource Management Plans, Fort Cummings under the existing Cultural Resources Management Plan, and the Dona Ana Mountains under a Recreation Area Management Plan would enhance both developed and dispersed recreation opportunities in these areas while protecting other significant resources. Interpretation of natural values in ACECs and cultural and paleontological values at sites such as Butterfield stage stops, Fort Cummings, Massacre Peak, and the Paleozoic Trackways Site would add diversity to the recreation opportunities available within the Resource Area. The addition of new interpretive sites would increase interpretive recreation potential within the Resource Area, while materials from sites such as the Paleozoic Trackways Site may be displayed in locally, regionally, and even internationally significant museums including the Carnegie Institute Museum of Natural History and the Smithsonian

Institution. Overall, recreation visits could be expected to increase to 280,000 per year.

Wildlife habitat improvement within the guidelines of habitat management plans in concert with game management by the New Mexico Department of Game and Fish could allow increases in game to sustain increased populations of deer, pronghorn, and small game for the enjoyment nonconsumptive wildlife users including photographers and bird watchers as well as consumptive wildlife recreationists like hunters and fishermen. Pronghorn habitat management in the Columbus, Cooke's Range/Nutt, Robledo Mountains, and Cedar Mountains would provide significantly greater opportunities for pronghorn hunting in the Resource Area. Deer and small game hunting quality would improve in those areas plus the Uvas Mountains and the West Potrillo Mountains. Habitat management plans and associated herd management by the Department of Game and Fish should also lead to the recovery of mule deer in the Organ Mountains and deer and desert bighorn sheep in the Peloncillo, Big Hatchet, and Alamo Hueco Mountains to levels that could sustain regular harvests.

Development and implementation of watershed management plans and grazing management plans and establishment of instream flows in the Gila Middle and Lower Box ACECs would all improve the quality of hunting in those areas as ground cover increases, particularly for small game and game birds. Furthermore, other recreation uses for which quality is enhanced by increased naturalness such as hiking, and photography would benefit from these actions.

Bird watching along riparian areas including the Gila Lower Box and Guadalupe Canyon would impact from riparian habitat management as vegetation structural and species diversity flourish. Instream flow establishment would protect the warm water fisheries as well as other types of riparian recreation in the Middle and Lower Boxes, which provide the vast majority of fishing opportunities in the Resource Area. Riparian and arroyo habitat management have the greatest potential to improve hunting quality for big game, small game, and game birds of any management practice in the Resource Area. Under this alternative, such improvements would be realized

in the Apache Box, San Simon Cienega, Gila Lower Box, Gila Middle Box, Organ Mountains, Guadalupe Canyon, and Placitas Arroyo Riparian Demonstration Project. The quality of other recreation opportunities in the Gila River Canyon including rafting and kayaking would also be protected by instream flows.

IN SUMMARY, land ownership adjustments under Alternative D would have significant impacts on recreation opportunities throughout the Resource Area, both from consolidating public land and thereby improving access and reducing potential management conflicts, and from acquisition and development of new access routes and recreation sites. Vehicle designations would restrict vehicle use opportunities to either existing or designated roads and trails over 95 percent of the Resource Area, while 4 percent would be closed to vehicle use and less than 1 percent would be open to all vehicle use. Development of access routes would improve hunting, hiking, and many other recreation opportunities throughout most of the Resource Area. Right-of-way exclusions and mineral development restrictions would enhance preservation of the natural integrity and primitive recreation quality of ACECs. Wildlife habitat management would allow increases in hunting opportunities for pronghorn, deer, and small game. Watershed and grazing management would improve the quality of primitive recreation opportunities such as hunting on portions of the Resource Area. Establishment of instream flows would ensure the maintenance of warm water fishing opportunities and other recreation qualities in the Gila Middle and Lower Boxes.

VISUAL RESOURCES

Under Alternative D, visual resource management could benefit from the acquisition of State trust and private land, much of which is within Class I and II areas. The acquired lands would be managed in conformance with VRM guidelines that should impede any uses of those acquired lands from altering the form, line, color, or texture of the natural landscape. Disposal of public lands would significantly reduce the number of small public land parcels in Class II, III, and IV areas. Despite the inclusion of Class II and III areas, disposal of these isolated parcels would not have

a significant effect on the scenic quality of landscapes because actions that could degrade scenery are much more likely to occur on non-Federal lands that currently predominate these landscapes. Conversely, acquisition of non-Federal inholdings in currently well-blocked public land would prevent activities in those areas that could degrade viewsheds on public land. Disposed lands adjacent to Las Cruces would likely become urbanized, leading to significant alteration of the basic visual elements over much of the mesa between Las Cruces and the Organ Mountains.

ACEC designations would constrain activities that could degrade scenic quality on 313,870 acres, including 215,130 acres that would be managed as VRM Class I areas because of Scenic ACEC designations.

Wilderness study designation of the Organ Needles, Gray Peak, Apache Box, and Pena Blanca areas would limit activities to conform with VRM Class II guidelines.

Vehicle closures would prevent degradation of visual resources by vehicle use, while vehicle limitations would limit new vehicle trail impacts on visual resources over most of the Resource Area. The Aden Hills and Lordsburg South Playa would be subject to visual impacts of new vehicle trails, which should not be significantly noticeable from anywhere for the Lordsburg Playa, but may be noticeable from Interstate 10 and some Dona Ana County roads for the Aden Hills Open Area.

Right-of-way avoidance and exclusion areas, and areas closed to locatable mineral entry, mineral material disposal, or fluid mineral leasing would have significant reductions in the potential for conflict between surface activities and VRM guidelines as compared with Alternative A. Areas open to rights-of-way and mineral leasing, sale, and location are mainly within VRM Class III and IV areas, and stipulations will be included to ensure conformance of any actions within these areas to VRM Class III or IV guidelines, whichever is appropriate. Locatable minerals actions would likely cause degradation of scenic quality in some Class II areas although four areas would be closed to locatable mineral entry, mostly in the Organ and Franklin Mountains.

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Wildlife habitat, land treatment, and watershed management actions would allow improvement in vegetation resources that could alter the colors and textures of landscapes, enhancing the natural scenic quality of large areas of public land while potentially creating contrasts in scenic vistas between the improved areas and adjacent untreated lands.

Instream flows would benefit the visual resources of the Gila River Canyon, in which the riparian community provides integral color, textural, and structural components of the landscape. Protection of the riparian community through instream flow acquisition is essential to maintain the lines, colors, and textures which enhance scenic qualities of the Gila Canyon.

IN SUMMARY, land ownership adjustments would impact visual resource management as lands in Class I and II areas are acquired, enhancing visual resource management of entire landscapes where current land ownership patterns preclude such management. Scenic ACEC, wilderness, wild river, or scenic river designations would protect visual resources to prevent any but the most limited management alterations to the natural forms, lines, colors, and textures of the landscape. Vehicle designations covering over 99 percent of the Resource Area would limit new roads or off-road vehicle use from causing disturbances that could degrade scenic quality throughout the Resource Area exclusive of the Aden Hills and Lordsburg South Playa. Visual resources would gain increased protection from right-of-way exclusion and avoidance areas and areas closed to locatable mineral entry, salable mineral development, or fluid mineral leasing. Locatable mineral development would likely degrade scenic quality in some Class II areas. Large scale vegetation changes from wildlife habitat management and watershed stabilization could gradually create some contrasts in colors and textures of landscapes.

WILDERNESS

Acquisition of inholdings within WSAs and wilderness areas would improve manageability of those lands in a manner that would enhance the wilderness characteristics of both the acquired lands and adjacent wilderness study area or wilderness area lands. Under this alternative, State

trust and private lands could be acquired to enhance management of those areas for naturalness and for primitive and unconfined types of recreation. Existing developments and uses of those acquired lands would not be curtailed, although management actions might be tailored to mitigate impacts of those developments and uses to conform to the Interim Management Policy.

Wilderness study of the Apache Box, Gray Peak, Organ Needles, and Pena Blanca areas would add currently unrepresented ecosystems to the National Wilderness Preservation System including highly scenic areas, historic sites, and habitat for endangered species.

Wild or scenic river study of the Gila Lower Box unit would enhance wilderness qualities of the portion of the unit that overlaps with the Gila Lower Box WSA. Such a designation would elevate protection of a portion of the WSA pending wilderness designation. If the Lower Box is designated as both wilderness and a wild or scenic river, the two designations would provide overlapping protection of the river corridor, enhancing the naturalness of the area.

Vehicle limitations would enhance wilderness values by diminishing man's ability to degrade natural qualities of the areas.

Development of access routes would enhance the ability of wilderness users to reach and enjoy diverse areas, enhancing opportunities to enjoy opportunities for solitude and primitive or unconfined types of recreation.

Data retrieval and research on cultural and paleontological sites in the Apache Box, Gray Peak, Organ Needles, and Pena Blanca areas would be constrained by the Interim Management Policy.

Acquisition of instream flows would enhance wilderness qualities by stabilizing important natural ecosystem components, leading to improvement in opportunities for primitive and unconfined types of recreation such as hunting, fishing, hiking, nature study, and photography.

Vegetation treatments would only be allowed within WSAs to the extent they conform to the Interim Management Policy, including prescribed

fire when it can be proven to be a natural component of the ecosystem. Livestock grazing manipulation would be allowed as a vegetation treatment provided that it leads to improvement in the natural condition of the area as a whole, and it does not contribute to a decline in the ecological condition of vegetation within the WSA.

IN SUMMARY, actions and activities would not be allowed in WSAs and wilderness areas that could impair natural values. Acquisition of State trust and private lands, wilderness designations, wild or scenic river designations, vehicle closures and limitations, access development, implementation of wildlife habitat management plans, watershed stabilization, fire management, livestock grazing management, and establishment of instream flows would all have benefits to wilderness resources and uses by improving the stability of natural systems and resulting in increased naturalness of wilderness resources.

SPECIAL STATUS SPECIES (T&E)

Plants

Lands identified for disposal in the valley and on the mesa east and west of Las Cruces, contain prime potential habitat (sand dunes) for the sand prickly pear cactus. An additional section of land near Berino, that is currently identified for disposal, would be added to the proposed Organ Mountains National Conservation Area designation to further protect this plant and its habitat. This parcel contains the largest known population of this species. A mitigation plan has been developed for this species. A pad or stem from plants on land identified for disposal are transplanted to a new site to maintain the genetic pool. Night-blooming cereus, which is very hard to locate and grows in creosotebush areas could also occur in disposal areas. The multiple-use management of 2,895,360 acres of public land and the acquisition of private and State trust lands would protect special status plants and their habitat as well as bring additional habitats under Federal protection.

SMA's and ACECs, especially in the Organ Mountains, would provide additional protection and management of all species and their habitat

found in these areas. There are at least 24 potential or listed Federal or State species in the Organ Mountain area. The Sneed's pincushion cactus is found on the south end of the mountain range. Most of the ACECs have been identified for their biological values and several have identified special status plants such as *Atriplex griffithsii*, a saltbush identified on the Lordsburg Playa. Management plans balancing livestock, wildlife and recreational use would provide long-term protection for these plants and their habitat. All areas would be either closed to vehicle use or limit the use to designated roads and trails which would keep plant theft and damage to the habitat from off-road vehicle use to a minimum. The study of four areas for wilderness, by the nature of the limited access and management policy, would add a measure of protection to special status plants and their habitat.

Areas designated as open to vehicle use would have a site-specific clearance done before the area was used in order to avoid impacts to special status species plants. Limiting vehicle use to limited or designated roads and trails would limit potential plant theft which is a real problem with special status species plants. Special status species plant habitat would also be further protected from off-road vehicle use. Closed areas would provide long-term protection for plant species and their habitat.

New access routes could open up new areas to plant collection and habitat loss.

Designation of right-of-way corridors and exclusion/avoidance areas would prevent or keep habitat loss to minimum in those areas.

Mineral actions, withdrawing or closing areas to mineral entry, would provide long-term protection to special status species plants and their habitat. Areas open to leasing would follow the standard procedures for these actions. Long-term loss would be mitigated by the reclamation stipulations but could still occur under mining notices (5 acres or less) where BLM has no discretionary authority. Although, the operator is still bound by Section 7 of the Endangered Species Act.

Developed recreation areas would provide special protective measures for special status species plants and their habitat in the area. These areas

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would provide for interpretative and educational awareness of the biological values in the area. Visitors would be limited to specific areas which protects the existing plants and their habitat. The Dripping Springs Natural Area and Aguirre Spring Recreation Area are good examples.

Watershed activity plans would provide for soil stabilization which improves vegetative cover. These plans could indirectly protect existing species and their habitat and provide for future populations.

Vegetation sale areas have a site-specific clearance done to ensure that no special status plants are affected. The desired plant community outlined under this Alternative, identifies many brush dominated areas for treatment by a chemical herbicide. The night-blooming cereus, which depends on creosotebush for structural support would be more visible if it occurred in a brush control area. The elimination of livestock grazing on 8,026 acres could add some measure of protection to special status plants and their habitat.

Riparian and arroyo habitats have the majority of Special status species plants in the Resource Area. The exclusion of grazing, and the improved management proposed in the SMA and ACEC management prescription of these areas would enhance and permanently protect species and their habitat.

IN SUMMARY, multiple-use management and acquisition of land, SMAs and ACECs, vehicle use limited to existing or designated roads and trails, watershed activity plans, and the elimination of livestock grazing would have short- and long-term benefits to special status plants by protection through the BLM's mandate to enhance and protect the lands it administers, limiting use or avoiding an area all together. Land disposal actions would have short- and long-term impacts from the loss of potential habitat.

Animals

Acquisition and consolidation of lands would provide improved manageability and additional habitat for special status species as well as provide a buffer around special status species habitat. Sensitive species such as desert bighorn sheep and

various raptors and reptiles would benefit from these acquisitions.

The designation of 27 ACECs would protect special status species such as desert bighorn sheep, Gila monster, peregrine falcon, and the spikedace and loachminnow. Closure of habitat to mineral material and fluid mineral leasing and in some cases closure to locatable mineral entry, off-road vehicle limitations, exclusion of right-of-way authorization, and development or revision of Allotment Management Plans would protect special status species habitat and prevent animal displacement.

Proposal of four new areas for wilderness study would help protect special status species habitat from disturbance and degradation. The study area would help protect habitat for desert bighorn sheep, reptiles such as the Gila monster, raptors such as the peregrine falcon, and two species of fish (spikedace and loachminnow).

The wild and scenic river study for the Gila River would protect habitat for special status species such as the spikedace and loachminnow (Hubbard 1985) as well as protect riparian habitat which supports numerous sensitive status species such as raptors, small birds, and reptiles.

Closure of areas closed to off-road vehicle use which contain special status species habitat such as the Gila Lower Box, Gila Middle Box, Apache Box, and Guadalupe Canyon would prevent habitat degradation and special status species disturbance. Limiting off-road vehicle use to existing or designated roads and trails would prevent special status species habitat degradation and animal disturbance on areas that are currently undesignated. Use of designated roads and trails in areas with special status species and habitat could result in habitat degradation and animal disturbance near these roads and trails if excessive use occurs.

In areas open to fluid mineral leasing with special stipulations, special stipulations such as no surface occupancy and seasonal use restrictions are used to mitigate impacts to special status species such as the desert bighorn sheep.

Exploration and development of locatable minerals on areas less than 5 acres could result in

site-specific habitat degradation and special status animal loss from access construction, site levelling, mining, and deposition of tailings. Activities on 5 acres or more require a plan of operation which would be analyzed in an Environmental Assessment to mitigate the effects of mining activity. Areas which contain significant special status animal habitat which would be closed to locatable mineral entry include Apache Box, Guadalupe Canyon, and the Organ Mountains. These areas would not be subjected to habitat degradation.

There are two existing SRMAs, the Organ Mountains and the Gila Lower Box, which contain special status animal habitat. Recreation activities in the Organ Mountains are mostly limited to existing and maintained trails and campgrounds. Limited hiking and camping occurs on some existing but unmaintained sites in the Organ Mountains and the Gila Lower Box. The remainder of the Resource Area is managed for dispersed recreation and is subject to unrestricted hiking and camping. These activities are of short duration usually occurring during hunting seasons. Special status species such as desert bighorn sheep, and their habitat may be subjected to this short-term disturbance.

Continued implementation of the six existing HMPs will provide protection to special status animal habitat, such as desert bighorn sheep, which occur in these areas. Activities which may occur in these areas are generally limited in their scope and extent by existing management guidelines.

Watershed planning on areas which have special status animal habitat (Gila Lower Box and Big Hatchet Mountains) would enhance special status species habitat because activities such as grazing, mineral development, and recreation would be managed to reduce erosion, and maintain or enhance the vegetation community and diversity.

Exclusion of grazing (in Red Rock Game Farm, Central Peloncillo Mountains, Bear Creek, Organ Mountains) would prevent habitat disturbance for special status species such as desert bighorn sheep (Sandoval 1982) because competition for forage and cover with livestock and habitat degradation from range developments would not occur.

Secured instream flows in the Gila River would protect special status species habitat (loachminnow and spinedace) (Hubbard, et al. 1985) and enhance riparian habitats which support several threatened and endangered birds and reptiles.

IN SUMMARY, under this alternative threatened and endangered animals would benefit from increased land acquisition, ACEC designation, wild and scenic river study for the Gila River, increased land with off-road vehicle restrictions, increased mineral withdrawals, watershed planning and elimination of grazing from key habitat areas. Additional habitat could be acquired, special status animal habitat would be protected from degradation, and animal displacement would not occur.

RIPARIAN AND ARROYO HABITATS

Improved manageability of acquired lands which contain riparian and arroyo habitats would protect and enhance their values. Activities associated with grazing, mining, and recreation would be managed to provide the least amount of disturbance to the area.

The development of management prescriptions for 27 ACECs would protect and enhance riparian and arroyo habitat resources within these areas. The closure of areas to mineral material sales, off-road vehicle limitations, and the development or revision of Allotment Management Plans would prevent or limit the degradation of riparian and arroyo habitat vegetation and soil. Arroyo channels or stream banks (Gila River, Bear Creek, Apache Box, Guadalupe Canyon) in these areas would be protected.

The wild and scenic river study and associated protective measures for the Gila River would protect and enhance the riparian values on public land along the river. All activities which would impair wild and scenic river qualities would be limited in scope and extent.

Areas closed to off-road vehicle use which contain riparian and arroyo habitat areas would not be subjected to activities which would degrade riparian and arroyo habitat. Areas where off-road

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vehicle use is limited to existing or designated roads and trails and which contain riparian and arroyo habitats would be subjected to limited disturbance wherever an existing road or trail crossed one of these areas. However, most off-road vehicle use on these roads and trails would not affect riparian and arroyo habitat areas.

Designation of right-of-way avoidance areas would limit the effects on riparian and arroyo habitat areas. If a right-of-way is needed through these areas then special stipulations would be required to minimize degradation of these areas. Right-of-way exclusion areas would not be subjected to degradation of riparian and arroyo habitat areas from activities which occur in the installation of utilities within right-of-way corridors.

Within areas open to fluid mineral leasing, there are numerous seeps, springs, and arroyo habitats. Activities associated with the exploration and development of fluid mineral leasing such as access construction, site levelling, drilling, and utility construction would degrade riparian and arroyo habitat vegetation and disturb soil along stream and arroyo channels. Areas closed to fluid mineral leasing which contain riparian and arroyo habitat will not be affected by activities associated with fluid mineral leasing. Site-specific stipulations for fluid mineral leasing would limit disturbance to riparian and arroyo habitat areas.

Exploration and development of locatable minerals on areas less than 5 acres could result in site-specific habitat degradation from access construction, site levelling, mining, and deposition of tailings. Activities on 5 acres or more require a plan of operation which would be analyzed in an Environmental Assessment to mitigate the effects of mining activity. Several areas that would be withdrawn from locatable mineral entry contain important riparian areas. These areas are Apache Box, Guadalupe Canyon, and the Organ Mountains. Activities associated with the exploration and development of locatable minerals would not occur and there would not be any impacts to riparian and arroyo habitats.

Mineral sales which occur in arroyo habitat areas would affect these areas because activities such as construction of access, material removal, and

mineral storage would remove vegetation, disturb stream bank and arroyo stabilization, and alter flow of water down the arroyo. Arroyo habitat within areas closed to mineral material sales would not be subjected to mineral material sales activities which would degrade arroyo habitats.

Management of the two existing SRMAs (Organ Mountains, Gila Lower Box), would continue; two additional SRMAs designated; and the remainder of the Resource Area would be managed for dispersed recreation. Recreation activities (hiking, camping) which could affect riparian and arroyo habitat within the Organ Mountains are limited to designated and maintained trails and campgrounds at Dripping Springs Natural Area and Aguirre Spring Recreation Area. Recreational activities (hiking, camping) which occur at the Gila Lower Box are usually limited to established, undesignated, unmaintained trails and camping areas. The Gila Lower Box subject to unrestricted hiking and camping, and riparian and arroyo habitat degradation, such as erosion and vegetation loss, may occur where use is concentrated. However, these activities (which are mainly related to hunting and camping) tend to be of short duration (several days a year).

The continued implementation of six existing HMPs and the development of six additional HMPs would provide protection to the riparian and arroyo habitat resource in these areas because activities which may occur would be limited in scope and extent.

Watershed planning would enhance and protect riparian and arroyo habitat resources within these areas. Watershed planning would prevent vegetation ground cover loss, stream bank and arroyo disturbance would be minimized, and erosion would be reduced. Activities such as grazing management, erosion control projects, mineral exploration and development, and recreation would be managed to mitigate disturbance to the resource.

Grazing would be excluded from significant riparian areas such as the Gila Lower Box and Bear Creek. Riparian and arroyo habitats within these areas would not be impacted by livestock grazing. Erosion, stream bank and arroyo habitat channel disturbance may be reduced through

increased ground cover. Intensive grazing use causing vegetation depletion in riparian and arroyo habitat areas would not occur.

Secured instream flows for the Gila River would enhance and protect riparian vegetation communities and stabilize stream banks which reduces the impacts of flooding by slowing down water flows which increases sediment deposition and percolation of water into the ground.

IN SUMMARY, under this alternative riparian and arroyo habitats would benefit from ACEC designations, wild and scenic river study, areas withdrawn from mining and grazing activities, increased areas with off-road vehicle restrictions and wildlife HMP development. Vegetation loss, soil disturbance, and stream and arroyo channels would not be disturbed or degraded.

SOCIAL AND ECONOMIC CONDITIONS

Under Alternative D, land ownership adjustments would result in a net loss of 9,140 acres of land under BLM management. The majority of the land designated for disposal would consist of isolated parcels in Grant and northern Luna Counties which are difficult to manage. This land would probably continue to be used as rangeland because of its location and physical characteristics. There would be 66,027 acres designated for disposal in Dona Ana County which would have the potential for residential and commercial development. The land on the East Mesa would be disposed of in two stages; the first land disposal area would be east of the line between townships 2 East and 3 East, the second area would be east of this line. This would have the effect of creating an orderly transfer of land into private ownership and avoid the creation of isolated tracts of public land. There would be an additional 3,840 acres adjacent to the Organ Mountains Coordinated Resource Management Plan which would be managed to provide an open space buffer 1 mile wider at the foot of the Organ Mountains. These provisions would allow local government to adjust to the pace of development and limit development at the foot of the Organ Mountains.

These land ownership changes would cause significant changes in the local property tax base. In Dona Ana County, there would be a loss of \$49,520 in PILT payments, and an estimated increase of \$879,095 in property taxes for a net increase of \$829,575 in local tax receipts. The disposal of 92,433 acres in Grant and Luna Counties would result in the loss of \$69,325 in PILT payments, and an estimated increase of \$33,800 in local tax receipts for a net reduction of \$35,525 in revenues. There would be 149,320 acres of land acquisition under Alternative D. These lands would consist of parcels in ACECs and WSAs which have significant resource values.

These lands are presently either State trust (93,110 acres) or privately-owned (56,210 acres). The transfer of the privately-owned land into public ownership would result in the loss of \$20,554 in property tax receipts and an increase of \$42,158 in PILT payments for a net increase of \$21,603 in revenues. The acquisition of 93,110 acres of State trust land would result in an additional \$69,833 in PILT payments the net result would be an increase of \$91,436 in revenues. The net effect of these transactions on local revenues would be an increase of \$935,000 in revenues to local governments in the Mimbres Resource Area. These changes in land ownership would have significant social impacts. The patterns of land use and urban growth in Dona Ana County would be influenced by the availability of non-agricultural land with development potential. This would allow urban growth to occur in the Rio Grande Corridor without sacrificing the agricultural land base. Management efficiency of the BLM would be improved by the consolidation of land holdings into rational management units. Significant resource conflicts in ACECs and WSAs would be reduced by the acquisition of inholdings. Landowners would have the opportunity of acquiring title to BLM inholdings.

There would be 27 ACEC designations. The Gila Middle and Gila Lower Box would be wild and scenic river study areas, and four new areas for wilderness study. These designations would protect areas of significant biological, scenic, and cultural importance. Their value would be to provide opportunities for the study and appreciation of the cultural and natural

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environment. There would be economic benefits to local communities as a result of increased tourism. These designations would cause some conflict over the use of resources by extractive economic activities. Conflicts over access and use of inholdings would be minimized through land ownership adjustments. There would be possible conflicts regarding the construction of Hooker Dam and its effect on the wild and scenic river study areas, and with riparian and stream ecology. Consideration of these values would require careful management of stream flow below Hooker Dam.

Under Alternative D, vehicle use designations would be much more restrictive than Alternative A. These designations would prohibit off-road travel on 99.4 percent of the Resource Area. The network of existing roads and trails would be relied upon to provide access to the vast majority of the area in the Resource Area. Reclamation of unneeded roads or trails would be possible in areas where vehicle use is restricted to designated roads and trails. These designations would cause conflicts with some resource uses, but they would protect soil and vegetation and provide benefit to the Resource Area as a whole.

Access would be obtained for 19 areas under Alternative D. The type of access (whether vehicle or foot) obtained would be determined as outlined in Chapter 2. The primary purpose of obtaining access to public land would be to provide opportunities for recreation, although some permittees would also benefit from these actions. There would be the possibility of conflict with landowners over the need for access, as well as additional administrative expense to BLM.

Right-of-way avoidance and exclusion area designations would protect significant areas of wildlife habitat, scenic value, and recreational potential from use as rights-of-way. These designations could increase the costs of locating rights-of-way in some areas.

There would be areas withdrawn from locatable mineral entry, closed to mineral materials disposal, and closed to mineral leasing. Site-specific requirements for fluid minerals leasing would be continued on some areas. The remainder of the Resource Area would be open to minerals leasing under standard terms and conditions: oil and gas,

3,532,300 acres and geothermal and nonenergy leasables, 3,499,500 acres. These restrictions would not be expected to cause a great impact on the mineral extraction industries. They would provide protection to the most areas where other significant resource values are found.

There would be 4 SRMAs under Alternative D. In addition, 5 trails, 4 interpretive areas (for cultural resources), and 2 primitive camping sites would be developed. These would be expected to serve 220,000 to 280,000 visitor used days per year. The BLM would collect \$75,000 in fees annually and an estimated \$1.8 million to \$2 million in gross receipts would be generated annually.

There would be four interpretive sites for cultural resources under Alternative D. Three existing cultural management plans would be retained and cultural resources management prescriptions would be developed for 11 ACECs. The major emphasis would be to inventory, preserve and protect sites. The benefits of this policy would be to encourage knowledge and appreciation of the cultural resources found in the Resource Area. Preservation of cultural resources has important social and economic benefits for future generations.

There would be major emphasis on wildlife habitat improvement under Alternative D. There would be six new HMPs developed for deer, pronghorn and bighorn sheep. Increases in deer populations would lead to an estimated 4 percent increase in hunter days which would contribute an additional \$28,492 to local economies.

There would be eight watershed management plans for critical watershed areas under Alternative D. These plans would reduce surface disturbing activities by requiring provisions for erosion control in project proposals. This may cause a slight increase in costs to some resource uses, but the economic effects would not be great. There would be benefits from reduced erosion sedimentation, flooding, and increased stream bank stability.

Vegetation sale areas would be continued, a new area would be opened between Lordsburg and Deming. This would provide the opportunity for the use of native vegetation in desert landscaping, but the economic effects would not be great.

Vegetation treatments for brush control and range improvement would be the same as in Alternative C. However, the utilization standard for forage in Alternative D would be 40 percent as opposed to 50 percent in Alternative A. This would result in a longer life for the treatment and higher economic returns to the treatment. The annual value of increased livestock and wildlife production from the vegetation treatment is estimated at \$1,325 per section. Additional benefits result from increased soil stability and reduced erosion.

Under Alternative D, livestock grazing would be eliminated on 8,026 acres. This would result in a reduction of approximately 90 AUs, or 0.2 percent of the livestock production in the Resource Area. There would be a loss of \$25,632 in gross receipts from livestock annually and \$2,128 in grazing fees. An additional 447 AUs would be lost from land exchanges in Dona Ana County. This would result in the loss of \$10,031 in grazing fees and \$126,948 in gross receipts from livestock annually. Land disposal in Grant and Luna Counties would result in the loss of 6,808 AUMs from public land. The BLM would lose \$15,382 in grazing fees annually, but there would be no loss in gross receipts as the land-use would be expected to continue as rangeland.

IN SUMMARY, the land ownership adjustments proposed in Alternative D would reduce the total acreage of public land by 9,000 acres. However, there would be 158,000 acres of land disposal and

149,000 acres of land acquisitions. The result of these land ownership changes would be to provide land for growth in the Mesilla Valley, to consolidate BLM holdings, and to acquire inholdings in SMAs. Local governments would gain approximately \$935,000 in additional property taxes as a result of these land ownership changes. Increased revenues would be due to a combination of increased PILT payments (from acquisition of State trust and private lands) as well as increased tax revenues as a result of disposal. Patterns of land use and development would be influenced by these land ownership changes.

Recreational development on public land would provide a wider spectrum of recreational activity and an estimated increase of \$2 million in gross receipts. Increases in hunting would provide an estimated \$28,492 in gross receipts to local economies.

Livestock grazing would be eliminated on 8,026 acres. This would result in the loss of about \$150,000 in gross receipts and in \$12,000 in grazing fees. Land disposal on isolated tracts would cause a reduction of about \$15,000 in grazing fees.

There would be no significant economic effects unique to Alternative D from ACEC designations, vehicle management, access acquisition, right-of-way paleontological resources, wildlife habitat policy, minerals policy, cultural and management, or vegetation management.

CUMULATIVE IMPACTS

Approximately 123 acres would be disturbed each year by minerals activities (see Table 4-1), for a total of 2,464 acres over the 20-year life of the Plan. BLM minerals restrictions would be in addition to existing U. S. Forest Service restrictions, which would further restrict minerals activities in the region. Disposal of land near Las Cruces that has moderate to high potential for geothermal resources would preclude leasing and development. Disposal of land near Las Cruces that has high potential for sand and gravel would preclude development. Salable minerals would be easier or harder to develop or obtain because there would be less regulation but the landowner might be unwilling to develop.

Land ownership adjustments would help block up public land and improve manageability. Development of disposal lands on the East Mesa would help prevent development of farmlands in Mesilla Valley. Development of disposal land on the East Mesa would combine with the development of 10,000 acres of State trust land on the East Mesa.

Approximately 745 acres would be disturbed each year by lands activities (see Table 4-1), for a total of 14,900 acres over the 20-year life of the Plan. Right-of-way exclusion and avoidance areas would require longer routes for some right-of-way applicants. Right-of-way restrictions would be in addition to existing U. S. Forest Service restrictions and other restrictions on neighboring public land, which would further restrict the location of rights-of-way in the region.

Access would be improved throughout the Resource Area by the acquisition of State trust and private lands. Access improvement would increase recreation opportunities but may also increase exposure of cultural resources and special status species. Roads such as State or Federal highways may be developed by other agencies, in addition to what is proposed for public land in this Plan.

Vegetation would be protected by land acquisitions, ACEC management prescriptions, vehicle use limitations, right-of-way restrictions, minerals closures, HMPs, WSAs, watershed management plans, livestock grazing plans, elimination of livestock grazing, and management of riparian and arroyo habitats. Land disposals, open vehicle use, and recreation development would result in vegetation loss in specific areas. Surface disturbing activities would disturb approximately 1,020 acres of vegetation each year (see Table 4-1), for a total of 20,400 acres over the 20-year life of the Plan. Most surface disturbance would be short-term and localized, and there would be few residual impacts after the areas revegetate. Desired plant community objectives would affect State trust, private, and other non-BLM lands (Alternatives B, C, and D). Land treatments would be beneficial to vegetation on State trust and private lands if done in conjunction with public land.

Soil disturbance and erosion would decrease as a result of ACEC management prescriptions, watershed management plans, HMPs, WSAs, vegetation treatments, vehicle use limitations, and closure of areas to minerals activities. Soil disturbance would occur on approximately 1,020 acres each year (see Table 4-1), for a total of 20,400 acres over the 20-year life of the Plan. Most soil disturbance would be short-term and localized, and there would be few residual impacts after the areas revegetate. Airborne dust would be reduced by ACEC management prescriptions, watershed management plans, HMPs, WSAs, vehicle use limitations, right-of-way restrictions, and vegetation treatments. Minerals activities, especially sand and gravel development, from a variety of sources on Federal, State trust, and private lands would combine to increase airborne dust. Water resources would benefit from watershed management plans, vegetation treatments, and riparian enhancements, which would protect vegetation, reduce runoff and water erosion, and increase percolation of water into the

ground. Surface disturbing activities on Federal, State trust, and private lands may combine and contribute to nonpoint source pollution.

Wildlife habitat would be protected or enhanced and habitat degradation prevented by closure of areas to minerals activities, HMPs, elimination of livestock grazing in key habitat areas, vehicle use limitations, watershed management plans, vegetation treatments, and ACEC management prescriptions. Wildlife would benefit from riparian enhancement. Wildlife habitat would be degraded and wildlife displaced by land disposals, open vehicle use, and minerals activities. Improvement of public land habitat would affect habitat and wildlife populations on adjacent State trust, private, and other Federal lands.

Additional cultural resources would be brought under BLM administration and protection by land acquisitions. Cultural values would be protected by management prescriptions for ACECs. Disturbance and damage of cultural resources would be reduced by vehicle use limitations, minerals closures, and riparian area protection.

Recreation opportunities would be increased by land ownership adjustments, development of recreation sites, wildlife HMPs, watershed management, and livestock grazing management. Acquisition of lands and access development would benefit both dispersed and developed recreation on public land by making more land available for both types of recreation on public lands. Right-of-way exclusions and mineral development restrictions would help preserve the natural integrity and primitive recreation quality of ACECs. Vehicle use designations on public land should have a net beneficial impact to State trust and private lands by reducing impacts on all lands throughout the Resource Area.

Visual resource management would be enhanced by acquiring lands in Class I and II areas, which would allow the BLM to manage those lands in accordance with VRM guidelines. Visual resources would be protected by ACEC management prescriptions, WSAs, vehicle use limitations, right-of-way restrictions, and minerals closures or limitations.

Management of four new areas for wilderness study (Alternatives B, C, and D) and 14 existing

WSAs under the Interim Management Policy would protect wilderness values in those areas until Congress decides on whether or not to designate them as wilderness. Land acquisitions, vehicle use limitations, wildlife HMPs, watershed management, fire management, livestock grazing management, and establishment of instream flows (Alternatives B, C, and D) would enhance wilderness resources and uses by improving the stability of natural systems and resulting in increased naturalness of wilderness resources.

Special status species and their habitat would be protected by land acquisitions and ACEC management prescriptions. Federal protection, conservation, and recovery measures only apply to Federally authorized actions and areas of Federal jurisdiction. The cumulative impact of continuing net loss on private land makes it imperative that protection is provided on Federal land. Any impacts to special status species can become significant since BLM cannot guarantee the continued existence of the populations on private land. The cumulative impacts of past, present, and future losses of populations or habitat on private land can significantly affect recovery potential for special status species.

Riparian and arroyo habitats would benefit from land acquisitions, ACEC management prescriptions, closure of areas to minerals activities, elimination of livestock grazing, and vehicle use limitations, which would protect vegetation, reduce soil disturbance, and reduce stream and arroyo channel disturbance.

Land disposals would result in an increase in property tax receipts and the property tax base in Dona Ana County would increase. The value of other lands would be affected by land disposal. The designation and management of ACECs coupled with the acquisition and management of the Gray Ranch by The Nature Conservancy would cause a combined economic impact on commodity-based land uses and activities within portions of the Resource Area. Minerals restrictions and right-of-way restrictions would affect property values in some areas. Recreation and cultural facility development would increase visitor days and generate additional gross receipts to local communities. Increases in deer populations would increase hunter days and generate additional gross receipts to local communities.

CHAPTER 5

CHAPTER 5 CONSULTATION AND COORDINATION

INTRODUCTION

The Draft Mimbres Resource Management Plan/Environmental Impact Statement (RMP/EIS) was prepared by an interdisciplinary team of resource specialists from the Bureau of Land Management's (BLM) Mimbres Resource Area.

Writing of the RMP/EIS document itself began in 1990; however, preceding the writing phase a complex process of data gathering and other preparatory activities occurred. This process included resource inventory, public participation, interagency coordination, and preparation of a Management Situation Analysis (MSA). The MSA is on file in the Mimbres Resource Area Office as is documentation of the public participation and interagency coordination. Consultation and coordination with agencies, organizations, and individuals occurred in a variety of ways throughout the planning process. A complete mailing list of all those contacted throughout the planning process is also on file in the Mimbres Resource Area Office.

The initial sections of this chapter are devoted to consultation and coordination activities carried out during the preparation of this Draft RMP/EIS. Comments and responses will be included in this chapter in the Proposed RMP/Final EIS.

During the planning process, formal and informal efforts have been made to involve the public, other Federal agencies, State, and local governments. Several points of public involvement are mandated with which there has been compliance.

FORMAL CONSULTATION

Consultation with the U.S. Fish and Wildlife Service (FWS) is required prior to initiation of any project by BLM that may affect any Federally listed special status species or its habitat. Consultation is required by Section 7 of the Endangered Species Act of 1973. This RMP/EIS is considered a major planning effort, and formal consultation has been initiated. Letters of formal

consultation are on file in the Mimbres Resource Area Office.

The New Mexico Department of Game and Fish (NMDGF) and the New Mexico Natural Resources Department have been contacted in regard to State listed threatened and endangered animal and plant species. This Plan is consistent with legislation protecting State listed species. NMDGF also provided information on existing wildlife population levels and proposed wildlife population goals. Coordination and consultation with the State will be continued throughout the planning process and during implementation of the plan.

The BLM cultural resource management program operates in accordance with 36 Code of Federal Regulations (CFR), Part 800, which provides specific procedures for consultation between the BLM and the State Historic Preservation Office (SHPO). A Memorandum of Understanding (MOU) NMSO-168 between the SHPO, Advisory Council on Historic Preservation and the BLM New Mexico State Office became effective October 19, 1982. This MOU incorporates procedures for exchanging information with the SHPO concerning cultural resources on public and private lands. It defines activities requiring consultation and establishes reporting standards. Similarly, the Programmatic Memorandum of Agreement for the protection of cultural resources under the Federal coal management program establishes procedures and focuses on measures that protect the types of sites usually found on Federal land. The SHPO has been consulted during the development of the RMP.

CONSISTENCY WITH OTHER PLANS

The BLM planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other Federal agencies, State and local governments, and Indian tribes, so long as the guidance and RMPs are also

consistent with the purposes, policies and programs of Federal laws and regulations applicable to public lands . . ." (43 CFR 1610.3-2). In order to ensure such consistency, finalized plans were solicited from Federal, State, and local agencies as well as Tribal governments listed in Table 5-1. These same agencies will receive copies of this Draft RMP and be asked to comment.

At this time there are no known inconsistencies between any of the alternatives and officially approved and adopted resource-related plans of other Federal agencies, State and local governments, and Indian tribes. Continuing coordination and consultation will take place during the public comment periods on the Mimbres Draft RMP/EIS, Proposed RMP/Final EIS and the Record of Decision.

PUBLIC PARTICIPATION

Public participation in the Mimbres RMP is a dynamic process occurring throughout the development of the Plan and beyond. In addition to formal public participation steps, informal contacts occur frequently with public land users and interested persons through meetings, field trips, telephone calls or letters. All applicable public participation is documented and analyzed in the planning process and kept on file in the Mimbres Resource Area Office.

A notice was published in the Federal Register on September 22, 1988, announcing the formal start of the planning process.

Prior to publishing the Notice of Intent, informal public meetings were held as early as March 1988 and have continued throughout development of the RMP/EIS. Meetings were held with BLM's District Advisory Council, Dona Ana County Associated Sportsmen, Sierra Club, Southern New Mexico Coalition of Conservation Organizations, Native Plant Society, Desert Trophy Hunters, Picacho Gun Club, Fort Bliss Rod and Gun Club, Rio Grande Corridor Committee, County Commissions (Luna and Grant Counties), BLM Safford District, Range Improvement Task Force, and Hidden Valley Ranch.

A comprehensive public participation plan was prepared, with the intent of involving interested or affected parties early and continuously throughout the planning process. The plan emphasizes localized one-to-one contacts, media coverage,

direct mailings and continued coordination with local, State, and other Federal agencies.

Meetings to determine the scope of the RMP and to obtain input on issues and planning criteria were held in Las Cruces (July 26, 1989), Deming (July 18, 1989), Lordsburg (July 19, 1989), and Silver City (July 20, 1989), New Mexico and El Paso, Texas (July 25, 1989). A scoping report which outlined issues and management concerns was issued prior to the meetings in June 1990. The report also gave the times and locations for the public meetings. A Follow-up Scoping Report was distributed in November 1989. The Report contained revisions to the preliminary issues, management concerns, and planning criteria based upon public review and comment. On June 25, 1990, a letter was sent to over 1,500 individuals on the RMP mailing list to update them on the progress of the RMP.

Section 202 of the Federal Land Policy and Management Act (FLPMA) of 1976 requires the BLM to coordinate land use planning activities with other Federal agencies, State and local governments and Indian tribes. FLPMA also requires BLM to ensure that consideration is given to non-Bureau plans that are pertinent to the development of the RMP, assist in resolving inconsistencies between Federal and non-Federal government plans and to provide for meaningful public involvement of other Federal agencies, State and local government officials and Indian tribes in the development of the RMP. In line with these requirements, BLM held initial interagency meetings throughout the month of June 1990 with over 40 entities of Federal, State and local governments, and Indian tribes. BLM officials have continued these contacts throughout the process by providing RMP updates at regularly scheduled meetings of the various governmental entities.

The Mimbres Resource Area plans to prepare an RMP summary update every year following the published final RMP. The purpose of this update will be to inform the public of the progress made in implementing the RMP. The summary will also describe the activity plans to be prepared the following year so that interested members of the public may request copies and comment on them. The BLM hopes that this will enable the public to become further involved in the specific land management actions resulting from the implementation of this RMP.

PUBLIC REVIEW OF THE DRAFT RMP/EIS

Table 5-1 is a partial listing of various Federal, State and local agencies, organizations, Indian Tribes, and individuals to which the Draft RMP/EIS is being sent for review and comment.

Informal coordination with the public has taken place throughout the planning process through

personal contacts, phone calls, letters, and will continue throughout the remainder of the planning process.

The RMP/EIS was prepared by an interdisciplinary team of resource specialists. Table 5-2 lists the team members, job titles, and responsibility associated with the RMP.

TABLE 5-1
PARTIAL LISTING OF DOCUMENT RECIPIENTS

FEDERAL GOVERNMENT

Department of Agriculture
 Agricultural Stabilization
 and Conservation Service
 Animal Plant Health Inspection Service
 Farmers' Home Administration
 Soil Conservation Service
 U.S. Forest Service
 Southwest Regional Office
 Gila National Forest
 Coronado National Forest
 Department of the Army
 Corps of Engineers
 Fort Bliss
 White Sands Missile Range
 Department of Commerce
 Department of the Interior
 Bureau of Indian Affairs
 Bureau of Mines
 Bureau of Reclamation
 National Park Service
 Office of Surface Mining
 U.S. Fish and Wildlife Service
 U.S. Geological Society
 Department of Energy
 Office of Environmental Compliance
 U.S. Border Patrol
 NASA
 Environmental Protection Agency
 Department of Transportation
 Federal Highway Administration
 Congressional Staff
 International Boundary and Water Commission

STATE GOVERNMENT

Arizona Game and Fish Department
 Bureau of Mines and Mineral Resources
 Department of Finance and Administration
 Range Improvement Task Force
 Historic Preservation Division
 State Historic Preservation Officer
 Energy and Minerals Department
 Governor of New Mexico
 Governor of Texas
 Health and Environmental Department
 Environmental Improvement Division
 State Land Office
 Natural Resources Department
 New Mexico Department of Game and Fish
 Division of State Forestry
 State Highway Department
 Congressional Delegation
 Museum of New Mexico
 Soil and Water Conservation Division
 New Mexico State University
 New Mexico State Police
 New Mexico Army National Guard
 New Mexico Department of Agriculture
 New Mexico Department of Commerce and Industry
 State Engineer
 Interstate Stream Commission
 New Mexico State Livestock Board
 State Oil Conservation
 New Mexico Mining Association

LOCAL GOVERNMENTS

Mayors
 Town of Mesilla
 Cities of:
 Anthony Hurley
 Bayard Las Cruces
 Central Lordsburg
 Deming Mesilla
 El Paso Silver City
 Hatch
 County Commissioners:
 Apache Grant
 Dona Ana Hidalgo
 Eddy Luna
 El Paso Public Service Board
 Southwest New Mexico Council of
 Governments - Silver City
 Coalition of Arizona/New Mexico Counties
 Elephant Butte Irrigation District
 Las Cruces Extra-Territorial Zone Commission
 New Mexico Border Commission
 New Mexico Association of Counties
 West Texas Council of Governments

SPECIAL INTEREST GROUPS

Continental Divide Trail Society
 New Mexico Cattle Growers Association
 Albuquerque Archaeological Society
 Museum of Natural History
 Earth First!
 Natural Resources Defense Council
 Central New Mexico Audubon Society
 National Audubon Society
 New Mexico Oil and Gas Association
 New Mexico Wildlife Federation
 Sierra Club
 The Nature Conservancy
 Society for Range Management
 Native Plant Society
 Independent Petroleum Association of
 New Mexico
 Farm and Livestock Bureau
 Public Land Council
 The Wilderness Society
 New Mexico Bureau of Land Management
 Wilderness Coalition
 Grazing Permittees
 New Mexico Environmental Law Center
 New Mexico Natural History Institute
 American Rivers
 Minerals Exploration Coalition
 Land Use Planning Committee

TRIBAL GOVERNMENT

Ysleta del Sur
 Mescalero
 Pueblo of Acoma
 Pueblo of Isleta
 San Carlos Apache Tribe
 White Mountain Apache Tribe
 Zuni Tribe

TABLE 5-2
LIST OF PREPARERS

DOCUMENT PRODUCTION	CORE TEAM	NATURAL RESOURCES TECHNICAL TEAM
Carol Alba, Computer Specialist, System Administrator/GIS User Support	Scott Florence, Team Leader Multi-Resource Branch Chief	Bill Gilbert, Technical Coordinator
James Christensen, Range Conservationist, ADS Data Entry	Dallas Bash, Social-Economist (Social & Economic Conditions)	Charles Hodgins, Planning Coordinator
Linda Cole, ADS Data Entry/MOSS Analysis	Tom Custer, Geologist (Minerals)	
Christine Commarato, Planning Clerk	Mark Hakkila, Natural Resource Specialist (Access, Recreation, Visual Resources, Wilderness)	
Roberta Cordova, Cartographic Technician	Bill Merhege, Wildlife Management Biologist (Soil, Air, Water; Wildlife; Riparian; Special Status Species Animals)	
Russ Davenport, ADS Data Entry/ MOSS Analysis	Mike Mallouf, Archaeologist (Cultural Resources)	
Rena Gutierrez, Writer-Editor, Document Production Specialist	Shirley Miller, Realty Specialist (Lands)	
Ron Hernandez, ADS Data Entry	Bea Wade, Range Conservationist (Livestock Grazing, Vegetation, Special Status Species Plants)	
Laird McIntosh, GIS Coordinator		
Jim Peterson, Cartographer		
Bernida Sanderson, Editorial Assistant, Word Processor		
Brian Samuelson, Cartographic Technician		
DISTRICT REVIEW TEAM	BLM STATE REVIEW TEAM	
Tim Salt, Area Manager, Mimbres Resource Area	Phil Beck, Realty Specialist	
Bruce Call, Soil Scientist	Tim Burke, Range Conservationist	
Ken Holmes, Wildlife Management Biologist	Bill Dalness, Geologist	
Jim McCormick, Range Specialist	Andy Dimas, Wildlife Management Biologist	
Juan Padilla, Realty Specialist	Clarence Hougland, Supervisory Realty Specialist	
Dwayne Sykes, Outdoor Recreation Planner	Lou Ann Jacobson, Archaeologist	
Chuck O'Donnell, Geologist	Steve Jordan, Civil Engineer	
Pam Smith, Archaeologist	Jan Knight, Botanist	
Richard Watts, ADM, Operations	Dave Mensing, Outdoor Recreation Planner	
	Jim Olsen, Geologist	
	Bill Overbaugh, Outdoor Recreation Planner	
	Ted Rael, Realty Specialist	
	Dave Schafersman, Hazardous Materials Coordinator	
	John Selkirk, Range Technician	
	Joseph I. Torrez, Geologist	
	J. W. Whitney, Natural Resource Specialist	

APPENDICES

APPENDIX A

APPENDIX A-1

BLM MINERAL RESOURCES POLICY

INTRODUCTION

This statement sets forth BLM policy for management of mineral and energy resources on public land. It reflects the provisions of three important Acts of Congress: the Mining and Minerals Policy Act of 1970, the Federal Land Policy and Management Act (FLPMA) of 1976, and the National Materials and Minerals Policy, Research and Development Act of 1980. This policy statement represents a commitment by BLM to implement the policies of these statutes consistent with BLM's other statutory obligations.

The Mining and Minerals Policy Act of 1970 declares that it is the continuing policy of the Federal Government to foster and encourage private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic mineral resources.

FLPMA reiterates that the 1970 Mining and Minerals Policy Act be implemented and directs that public land be managed in a manner which recognizes the Nation's need for domestic sources of minerals and other resources. FLPMA also provides for improved inventory, planning, and decision processes.

The 1980 National Materials and Minerals Policy, Research and Development Act restates the need to implement the 1970 Act and requires the Secretary of the Interior to improve the quality of minerals data in Federal land use decision making. In April 1982, the President delivered to Congress the first annual report required by the 1980 Act, which provided specific guidance to implement these acts.

The BLM recognizes that public land is an important source of the Nation's mineral and energy resources, some of which are critical and strategic. BLM is responsible for making public land available for orderly and efficient development of these resources under principles of balanced multiple-use management.

The following principles will guide BLM in managing mineral resources on public land:

1. Except for Congressional withdrawals, public land shall remain open and available for mineral exploration and development unless withdrawal or other administrative action is clearly justified in the National interest.
2. BLM actively encourages and facilitates the development by private industry of public land mineral resources in a manner that satisfies National and local needs and provides for economically and environmentally sound exploration, extraction, and reclamation practices.
3. BLM will process mineral patent applications, permits, operating plans, mineral exchanges, leases, and other use authorizations for public lands in a timely and efficient manner.
4. BLM's land use plans and multiple-use management decisions will recognize that mineral exploration and development can occur concurrently or sequentially with other resource uses. The Bureau further recognizes that land use planning is a dynamic process and decisions will be updated as new data are evaluated.
5. Land use plans will reflect geological, energy and mineral values on public land through more effective geology, energy and mineral resource data assessment.
6. BLM will supervise salable and leasable mineral operations to ensure proper resource recovery and evaluation, production verification, diligence and inspection and enforcement of the lease, sale or permit terms. BLM will receive Fair Market Value for mineral commodities where the laws provide.
7. The Bureau will maintain effective professional, technical, and managerial personnel knowledgeable in mineral exploration and development.

These principles will be implemented immediately and further clarified where necessary through specific guidance to the field.

APPENDIX A-2

MINERAL LEASING PROPOSALS

INTRODUCTION

Prior to offering lands for leasing, the New Mexico State Office Adjudication Staff reviews the records to determine if the minerals are available for leasing and if stipulations need to be attached to the lease form.

LEASE TERMS AND CONDITIONS

A BLM oil and gas and geothermal lease form includes the lease terms and conditions which cover subjects such as bonding, rentals and royalties, inspections, and safety. Also covered are protection of the environment, surface resources, and improvements.

The "conduct of operations" section of the lease form establishes the general requirements for the protection of surface resources and is referred to herein as "standard" lease terms. This section provides authority for the modification to sighting, design of facilities, timing of operations, and specification for interim and final reclamation measures to minimize adverse environmental impacts. The standard lease terms specifically require that the lessee contact the lessor prior to disturbing the surface and specify that the lessee may be required to complete minor inventories or short-term special studies.

Stipulations

Stipulations are conditions of lease issuance which the local office of the BLM or other agency provide for additional and more stringent environmental protection within the terms of the lease contract. Without stipulations, proposed operations can be modified but not denied (except under certain specific, nondiscretionary statutes).

Stipulations will be used whenever mitigating measures deprive a lessee of basic lease rights. Because of this effect on lease rights, lessees must be aware of all stipulations prior to acceptance of a lease offer by BLM.

BLM policy is that the use of stipulations should be considered appropriate only when they are both necessary and justifiable. The contractual controls existing in the lease (the standard terms, regulations, and formal operational orders) provide substantial latitude within which the BLM may require modification of the sighting, design and timing of operations on leaseholds, and interim and final reclamation measures. They do not, however, allow the BLM to require modifications to proposed operations that would prevent economic extraction of otherwise commercial deposits of oil and gas. Therefore, if a lessee may be prevented from economically extracting fluid minerals, then stipulations are necessary and are to be used. A stipulation is justifiable if there are resources, values, uses, or users present that (1) cannot coexist with fluid minerals operations, or (2) cannot be adequately managed or accommodated on other lands for the duration of the operation, and (3) would provide greater benefits to the public than those of fluid minerals operations.

The content and accurate wording of stipulations are very important since stipulations become part of the lease contract. If the stipulations are ambiguous, potential lessees will be uncertain as to the value of the lease. Also, if poorly written, the BLM may fail to retain, within the terms of the lease, the right to deny operations. Therefore, to the extent feasible, stipulations are to specify the reason for the stipulation, the lands involved, and the probable effect of the stipulations on lease activities.

The existing and proposed fluid leasing stipulations to be used in the alternatives follow in this Appendix. Also shown are the standard formats for the No Surface Occupancy, Timing Limitation, and Controlled Surface Use stipulations.

The process through which the Special Management Areas (SMAs) were identified included, by alternative, stipulations to protect their values from fluid minerals leasing and development.

The analysis of potential impacts on fluid leasing, by alternative, was done on an interdisciplinary basis. The rationale through which stipulations were assigned consisted of consideration of the resource value, consideration of the fluid mineral potential, and a determination as to which constraints could afford maximum protection while allowing for fluid mineral development. In those areas where resource values and fluid mineral exploration and development were found to be mutually exclusive, where protection of resource values was clearly in the public interest and where it was shown that a less restrictive stipulation could not adequately protect the resource value, the No Surface Occupancy stipulation was assigned.

Public land may be affected by discretionary and nondiscretionary closures which are presented in a lease as stipulations. A discretionary closure includes those lands where the BLM has determined that oil, gas, or geothermal leasing, even with the most restrictive stipulations (including No Surface Occupancy for the entire leasehold), would not adequately protect other resources, values, or land uses. Nondiscretionary closures include those lands that must be closed to oil, gas, or geothermal leasing for reasons beyond the discretion of the BLM. These are lands specifically precluded from fluid mineral leasing by law, regulations, Secretarial or Executive Order, or that have been otherwise formally closed by decisions reached beyond the scope of the BLM. The White Sands Missile Range (WSMR) and Dona Ana Range portion of Fort Bliss military areas are excluded from leasing by nondiscretionary closures.

Lands which are currently under lease will not be affected by stipulations identified under the Balanced, Conservation, and Production Alternatives. New leases for lands which are contained in SMAs will contain the stipulation or stipulations designated in the selected alternative. Activities normally deferred to activity planning, or other planning completed subsequent to the Resource Management Plan (RMP), include drill site location; field development and facility layout plans; utilization and communitization plans; transportation, power or pipeline routing plans (other than for major designated corridors); and others. Many of these activities are addressed after an Application for Permit to Drill (APD) is received. One APD every 3 years is expected for the life of this RMP.

All future geophysical exploration, leasing, and development proposals are to be reviewed for conformance with the RMP to ensure the availability of land for these activities and to ensure compliance with applicable mitigating measures as identified in the RMP. In certain cases, geophysical exploration may be restricted or excluded. Any site-specific reviews required by operating orders, regulations, or to ensure National Environmental Policy Act (NEPA) compliance will also need to be performed at appropriate times.

Waivers, Exceptions, and Modifications To Lease Stipulations

Waivers, exceptions, and modifications to existing lease stipulations can be granted if circumstances or relative resource values change or if the lessee demonstrates that operations can be conducted without causing unacceptable impacts. A waiver is a permanent exemption to a lease stipulation. An exception is one-time, case-by-case exemption to a stipulation. A modification is a change to the provisions of a stipulation, either temporarily or for the term of the lease.

Any requests for waivers, exceptions, or modifications in the Resource Area will involve an analysis of associated impacts. Depending on the severity of these impacts, the request may be (1) granted by the Area Manager, (2) publicly posted for 30 days as required by the Leasing Reform Act of 1987, or (3) analyzed through an amendment to the RMP.

MINERAL LEASING PROPOSALS

CONTINUING MANAGEMENT GUIDANCE

Under continuing management guidance, the following existing leasing stipulations and areas closed to leasing would be Common to All Alternatives.

Not Open to Leasing:

Aden Lava Flow WSA
Alamo Hueco Mountains WSA
Apache Box WSA
Big Hatchet Mountains WSA
Blue Creek WSA
Cedar Mountains WSA

Cooke's Range WSA
Cowboy Spring WSA
Florida Mountains WSA
Gila Lower Box WSA
Guadalupe Canyon WSA
Las Uvas Mountains WSA
Organ Mountains WSA
Peloncillo Mountains WSA
Robledo Mountains WSA
West Potrillo Mountains/Mt. Riley WSA

Open to Leasing with Stipulations:

Recreation and Public Purpose (> than 40 acres)

Airports
City of Las Cruces Sludge Site
Dona Ana Prison Site
Las Cruces Shooting Range
Lord's Ranch
NMSU Observatory Site
Northwestern University Observatory Site
School Sites
Spring Canyon Park

Other Areas

Jornada Experimental Range
NMSU College Ranch
White Sands Missile Range Safety Evacuation Area

In addition to the above which is Common to All Alternatives, the following restrictions will be placed on fluid mineral leasing.

ALTERNATIVE A

Open to Leasing with Stipulations:

Franklin Mountains Threatened and Endangered Species Area
Organ Mountains Recreation Lands

Open to Leasing with No Surface Occupancy:

Aden Lava Flow Research Natural Area
Central Peloncillo Research Natural Area
Kilbourne Hole National Natural Landmark

ALTERNATIVE B

Not Open to Leasing:

Aden Lava Flow ACEC
Alamo Hueco Mountains ACEC
Antelope Pass ACEC
Apache Box ACEC
Bear Creek ACEC
Big Hatchet Mountains ACEC
Box Canyon ACEC
Cedar Mountains ACEC
Central Peloncillo Mountains ACEC
Cooke's Range ACEC
Cowboy Spring ACEC
Dona Ana Mountains ACEC
Florida Mountains ACEC
Gila Lower Box ACEC
Gila Middle Box ACEC
Granite Gap ACEC
Guadalupe Canyon ACEC
Kilbourne Hole ACEC
Las Uvas Mountains ACEC
Lordsburg Playa ACEC
Northern Peloncillo Mountains ACEC
Old Town ACEC
Organ/Franklin Mountains ACEC
Paleozoic Trackways ACEC
Rincon ACEC
Robledo Mountains ACEC
San Diego Mountain ACEC
Tres Hermanas ACEC
Uvas Valley ACEC

Open to Leasing with No Surface Occupancy:

Butterfield Trail (within ¼ mile of trail)
Continental Divide National Scenic Trail (within 1 mile of trail)
Los Tules ACEC

ALTERNATIVE C

Open to Leasing with No Surface Occupancy:

Aden Lava Flow ACEC
Butterfield Trail (within ¼ mile of trail)
Continental Divide National Scenic Trail (within ¼ mile of trail)
Los Tules ACEC
Rincon ACEC (within 100 feet of petroglyphs)

ALTERNATIVE D

Not Open to Leasing:

Aden Lava Flow ACEC
Alamo Hueco Mountains ACEC
Antelope Pass ACEC
Apache Box ACEC
Bear Creek ACEC
Big Hatchet Mountains ACEC
Box Canyon ACEC
Central Peloncillo Mountains ACEC
Cooke's Range ACEC
Cowboy Spring ACEC
Dona Ana Mountains ACEC
Florida Mountains ACEC
Gila Lower Box ACEC
Gila Middle Box ACEC
Granite Gap ACEC

Guadalupe Canyon ACEC
Kilbourne Hole ACEC
Lordsburg Playa ACEC
Northern Peloncillo Mountains ACEC
Old Town ACEC
Organ/Franklin Mountains ACEC
Paleozoic Trackways ACEC
Robledo Mountains ACEC
San Diego Mountain ACEC
Uvas Valley ACEC

Open to Leasing with No Surface Occupancy:

Butterfield Trail (within ¼ mile of trail)
Continental Divide National Scenic Trail (within
¼ mile of trail)
Los Tules ACEC
Rincon ACEC (within 100 feet of petroglyphs)

Serial No. _____

NO SURFACE OCCUPANCY STIPULATION

No surface occupancy or use is allowed on the lands described below (legal subdivision or other description).

For the purpose of:

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

Form #/Date

Serial No. _____

TIMING LIMITATION STIPULATION

No surface use is allowed during the following time period(s). This stipulation does not apply to operation and maintenance of production facilities.

On the lands described below:

For the purpose of (reasons):

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

Form #/Date

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CONTROLLED SURFACE USE STIPULATION

Surface occupancy or use is subject to the following special operating constraints.

On the lands described below:

For the purpose of:

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

Form #/Date

APPENDIX B

APPENDIX B-1

LANDS AND MINERALS DISPOSAL POLICY

SURFACE ESTATE DISPOSAL POLICY

All surface estate disposal actions require the preparation of a mineral report to assess the mineral potential of the property prior to disposal.

Any potential interference with mineral development will be considered through the disposal process. The creation of a split surface mineral estate causing surface interference with Federal mineral development will be avoided to the extent possible. Any surface disposal action within the Rio Grande Valley will be analyzed for potential impacts to Federal mineral material development.

The following procedures will be followed for the various types of surface estate land disposal actions in the Mimbres Resource Area.

EXCHANGES

Disposal by exchange must meet the criteria outlined in the Federal Land Policy and Management Act (FLPMA) Sec. 206, whereby it is determined that the public interest will be well served by making the proposed exchange. Exchanges outside of disposal areas may be possible if it is clearly determined that it is in the best interest of the public. Exchanges that would result in the acquisition of non-public lands in disposal areas will not be considered. The following principles will not be considered. The following principles will guide the Mimbres Resource Area in its land exchange program.

1. The Mimbres Resource Area will continue to strive to process mutually benefitting, public interest land exchanges in a timely and efficient manner.

2. Acquisition (through exchange rather than purchase) of lands or interests in lands required for resource management programs will always be the preferred method of acquisition. This will reduce the expansion of Federal real estate holdings and help to ensure the integrity of State and local tax bases.

3. Comments from the State, local governments, and the general public shall be sought and considered before completion of each exchange.

4. Patent and deed reservations and conditions will be kept to the absolute minimum necessary to complete the transaction. Rights of third parties holding rights-of-way and other legal interests in the exchanged lands will be protected.

5. The generally preferred rule is for both surface and subsurface (mineral) estates to be traded in an exchange. However, due to third party encumbrances, or difficulties in the valuation process, it may be preferable to complete certain exchanges with reservations. Such exceptions to the generally preferred rule are to be made on a case-by-case basis.

6. Exchanges shall be utilized to consolidate or unite the surface and subsurface estates for both the Federal Government and non-Federal owners in split or mixed-estate situations.

7. Exchanges may be utilized to effect ownership and management area boundary changes and to form more logical and efficient land and resource management areas for both the BLM and non-Federal owners.

8. Whenever the law permits, expenses incurred by BLM on exchange actions for the benefit of other Federal agencies shall be recovered from the benefitting agency. The BLM shall not attempt to recover nominal costs.

9. When an exchange involves the cancellation of a grazing permit or lease, the compensation for rangeland improvements and 2-year notification requirements of Section 402(g) of FLPMA and 43 Code of Federal Regulations (CFR) 4110 will be met.

10. The acquisition of non-public lands in Special Management Areas or lands containing unique or unusual historic, cultural, mineral, recreational, scientific, scenic or wildlife habitat values will be pursued as a first priority. Likewise, proposals that would convey lands out of Federal ownership

that possess special values will not be considered when formulating any exchange proposals.

SALES

Property selected for sale must be identified as being potentially suitable for disposal in an approved land-use plan and must meet one or more of the criteria outlined in FLPMA Sec. 203. Proposals that would convey non-public lands within disposal areas will not be considered. In addition, if the tract is 2,500 acres or more, procedures outlined in Sec. 203(c) must also be followed. The disposal criteria is as follows:

- Such tract because of its location or other characteristics is difficult and uneconomic to manage as part of public land, and is not suitable for management by another Federal department or agency; or
- Such tract was acquired for a specific purpose, and the tract is no longer needed for that or any other Federal purpose; or
- Disposal of such tract will serve important public objectives, including but not limited to expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweighs other public objectives and values, including but not limited to recreation and scenic values, which would be served by maintaining such tract in Federal ownership.

Conformity with one or more of these criteria must be determined during the preparation of an environmental assessment (EA). Anticipated environmental impacts to existing resources such as minerals, wildlife, recreation, range, cultural resources, wilderness values, floodplains, paleontological values, visual resources, areas of critical environmental concern (ACEC), wetlands, special status (T&E) species and habitats, wild and scenic rivers, prime or unique farmlands, and social and economic conditions, will be considered during the preparation of each EA. The EA will be used to determine whether or not the subject parcel is truly suitable to be offered for sale. Once this determination has been made, a fair market appraisal of the property will be completed to set the minimum acceptable bid.

Also, assessed is a determination as to what method of sale will be used if the tract is in fact

deemed suitable for sale. Several factors are considered in determining the method of sale which include, but are not limited to: the needs of State or local governments, adjoining landowners' interests and concerns, public policies, historical uses, and equitable distribution of the land. The Mimbres Resource Area policy for determining the sale method is as follows:

1. Competitive Bidding is the preferred method of sale and will be used where clearly there would be a number of interested parties bidding for the land and they could make practicable use of the land regardless of adjoining landownership. Competitive bidding will also be used where the land is clearly within a developing or urbanizing area and land values are increasing due to their location and interest on the competitive market. If there are no overriding bases for modifying competition or direct sale, the land will be offered through competitive bidding. Normal practice for competitive sales is to first offer the land for sale by sealed bid; if unsold, offer for sale over-the-counter.

2. Modified Competitive Bidding may be used to permit the existing grazing user or adjoining landowner to meet the high bid or to limit the number of persons permitted to bid on the land. These sales would normally be for lands not located near urban expansion areas or with rapidly increasing land values, when there is a need to avoid jeopardizing existing use of adjacent land, to assure compatibility of the possible uses with adjacent lands, and avoid dislocation of existing users. This procedure will allow for limited competitive bidding to protect ongoing use.

3. Direct (without competition) Sales may be used when, in the opinion of the authorized officer, the public interest would be served. Examples include but are not limited to:

- A tract identified for transfer to State or local governments or nonprofit organizations; or
- A tract identified for sale that is an integral part of a project of public importance and speculative bidding would jeopardize the timely completion and economic viability of the project; or
- There is a need to recognize authorized use such as an existing business which would be threatened if the tract were purchased by other than the authorized user; or

- A tract is surrounded by land in non-Federal ownership and does not have public access; or
- The lands support inadvertent unauthorized use or occupancy.

4. When lands have been offered for sale under direct or modified bidding procedures and they remain unsold, then the land will be re-offered by the competitive bidding procedure. In no case will the land be sold for less than fair market value.

Public participation and intergovernmental coordination will be sought and encouraged during the development of each sale schedule. Where a decision is made to dispose of land within a grazing allotment, permittees and lessees will be given a 2-year notice of the planned disposal in accordance with 43 CFR 4110.4-2. If the 2-year notification period is not waived, the parcel may not be offered for sale until the end of the notification period. Grazing permittees/lessees will receive fair market value (less salvage value) for their interest in authorized permanent rangeland improvements located on public land in accordance with 43 CFR 4120.6-6. If floodplain tracts are designated for disposal, the patent will contain language indemnifying the United States against any claims for loss or injury due to flooding.

RECREATION AND PUBLIC PURPOSES (R&PP) PATENTS

The Mimbres Resource Area will continue to issue patents to qualified governmental and nonprofit entities for public parks, recreational sites, and historical sites under the Recreation and Public Purposes (R&PP) Act throughout the life of the Resource Management Plan (RMP). These patents may be issued at less than fair market value as outlined in 43 CFR 2740. Applications for patent of public land under the R&PP Act will be processed as a Mimbres Resource Area priority under the requirements of the National Environmental Policy Act (NEPA) and will always be subject to public review. No sanitary landfill sites will be patented in the Mimbres Resource Area pursuant to the R&PP Act until regulations implementing the 1988 amendment to the R&PP Act are completed. R&PP applications may be entertained, in either retention or disposal zones; yet, a determination must always be made that the

disposal action is in the public's best interest.

MINERAL ESTATE DISPOSAL POLICY

Disposal of the mineral estate is possible under Sections 206 and 209 of FLPMA. It is the policy of the BLM to avoid disposing of the surface estate while retaining the mineral estate unless there are areas of "known mineral value", as defined in 43 CFR 2720.0.5. In areas of "known mineral value", the mineral estate (and the surface estate if substantial interference to development would result) should be retained except as described below.

Prior to any land disposal a "mineral value" determination must be made following a field reconnaissance by a BLM mineral examiner. A mineral report must be written to evaluate the leasable, locatable, and saleable mineral potential of each proposed sale or exchange. Under FLPMA, the conclusion of the mineral examiner will include an opinion as to whether the lands have "known mineral values". If professional judgment concludes that the land does not contain "known mineral values," the surface and subsurface estate may be conveyed, subject to any existing mining claims(s) or mineral leases.

A mining claim of record under Section 314 of FLPMA generally prevents an exchange or sale. If the land is under mining claim, the surface should be retained under Federal ownership or the claim examined for validity. However, a validity examination may be waived and the BLM may proceed with the sale or exchange of both the surface and the mineral estate, subject to the existing mining claim(s) if:

- The land meets the criteria for disposal as determined through land-use planning, and
- The land has no "known mineral value" as determined by a BLM geologist or mining engineer, and
- The prospective patentee is willing to accept defeasible title, preserving whatever rights the mining claimant may have. Conveyance of the surface and mineral estate would be subject to "existing mining claim(s)," allowing the mining claimant to apply for and receive full fee patent if a valid discovery were made prior to the date of

transfer under Sections 206 or 209, or alternatively, receive patent to the mineral estate only if discovery were made after the original conveyance.

The BLM will proceed with a sale or exchange only after reasonable efforts have been made to secure relinquishment of the mining claim(s). If the mining claimant opposes the action, the Notice of Realty Action (NORA) protest procedures would apply.

For a direct sale or an exchange, the proponent must be informed early and fully of the potential title conflicts and rights of the mining claimant under the law. The BLM should then proceed only if these conditions are acceptable to the proponent. For a proposed competitive sale, the field office must carefully consider the effect on sale price, likelihood of success, and interests to be served if the sale is made subject to the rights of the mining claimant. If it is clearly in the public interest to proceed, the BLM must secure purchaser waiver of any liability against the United States in the event of subsequent title litigation.

In cases where lands are patented without a reservation of locatable minerals, a FLPMA patentee is believed to have standing to bring private contest (43 CFR 4.450) against the mining claim(s). Should he or she do so, the burden is upon the patentee to prove lack of discovery. If the patentee is successful, or if the claims are abandoned or relinquished, the land would not be open to further location, and the patentee would receive full title to the involved locatable minerals.

Mining claim location and mineral leases for lands in which the surface title has passed under FLPMA disposal authority may be made only after regulations providing for such locations or leasing have been made. Because these regulations have not as yet been issued, lands disposed of under FLPMA are subject to de facto withdrawal. Lands disposed of under FLPMA are not withdrawn from mineral material sales or free-use permits.

All minerals must be reserved if the Federal lands are conveyed out of Federal ownership pursuant

to FLPMA disposal authority, except in the limited instances that follow:

1. Sales

a. If the public land proposed for sale is determined to have "known mineral values" for locatable, leasable, or saleable minerals, one of the following courses of action may be taken:

(1) Reject the offer to purchase or cancel the offer of sale.

(2) Dispose of the surface estate and reserve all of the mineral interests to the United States.

(3) Dispose of the surface and convey all or part of the mineral interests under terms set forth in Section 209(b) of FLPMA.

b. If the lands have no "known mineral values," the mineral interests may be simultaneously disposed of with the surface estate under authority of Section 209(b) FLPMA.

2. Exchanges

a. Public land which does not have "known mineral values" may be offered in exchange without any mineral reservation. This will apply whether or not the non-Federal party in an exchange controls the minerals under his or her land.

b. If the public land has some potential for mineral development, reserving the mineral interests is not mandatory as long as the values can be equalized by the payment of money and so long as the payment does not exceed 25 percent of the total value of the land.

In any case, normally it is desirable to keep surface and mineral ownership together in an exchange, whenever possible, to eliminate future problems associated with split-estate ownership.

c. If public land in an exchange is determined to have "known mineral values" for locatable, leasable, or saleable minerals, it may be in the public interest to cancel the offer, depending upon the significance of the deposits. The leasable minerals alone can be reserved if significant.

APPENDIX B-2

SET-ASIDES

The following is a list of existing set-asides under Memorandums of Understanding (MOUs) with the City of Las Cruces and Las Cruces School District No. 2 as a result of the Elena Gallegos Grant Exchange Amendment (1982) and Southern Rio Grande MFP Amendment (1986):

LAS CRUCES SCHOOL DISTRICT NO. 2 PUBLIC PURPOSE SITES (DONA ANA COUNTY)

SITE		LEGAL DESCRIPTIONS		
Elementary School No. 1 (21.15 Acres)	Lot 10	Sec. 4	T. 23 S.	R. 2 E.
Elementary School No. 2 (16.40 Acres)	Lot 12	Sec. 10	T. 23 S.	R. 2 E.
Elementary School No. 3 (15 Acres)	S½NE¼NE¼NE¼ SE¼NE¼NE¼	Sec. 28	T. 23 S.	R. 2 E.
		Sec. 28	T. 23 S.	R. 2 E.
Elementary School No. 4 (15 Acres)	SW¼SW¼SW¼ W¼SE¼SW¼SW¼	Sec. 17	T. 22 S.	R. 2 E.
		Sec. 17	T. 22 S.	R. 2 E.
Junior High School No. 1 (30 Acres)	W¼SW¼SE¼ W¼SE¼SW¼SE¼ W¼NE¼SW¼SE¼	Sec. 28	T. 22 S.	R. 2 E.
		Sec. 28	T. 22 S.	R. 2 E.
		Sec. 28	T. 22 S.	R. 2 E.
Onate Senior High (41.89 Acres)	Lot 7	Sec. 9	T. 23 S.	R. 2 E.
Senior High (60 Acres)	SE¼NE¼ E¼SW¼NE¼	Sec. 33	T. 22 S.	R. 2 E.
		Sec. 33	T. 22 S.	R. 2 E.
Highland Elementary School (18 Acres)	E¼NW¼	Sec. 28	T. 22 S.	R. 2 E.
School Site No. 1 (50 Acres)	SW¼NW¼ N¼N¼NW¼SW¼	Sec. 23	T. 22 S.	R. 2 E.
		Sec. 23	T. 22 S.	R. 2 E.
School Site No. 2 (50 Acres)	S½N¼NW¼NW¼ S½NW¼NW¼ SW¼NW¼	Sec. 18	T. 22 S.	R. 3 E.
		Sec. 18	T. 22 S.	R. 3 E.
		(PORTION NORTH OF U.S. 70)		
School Site No. 3 (75 Acres)	S½SW¼NW¼ S½N¼SW¼NW¼ N¼NW¼SW¼ E¼NE¼NE¼SE¼ E¼SE¼NE¼	Sec. 13	T. 24 S.	R. 2 E.
		Sec. 13	T. 24 S.	R. 2 E.
		Sec. 13	T. 24 S.	R. 2 E.
		(ADJACENT TO FRONTAGE ROAD		
		Sec. 14, T. 24 S., R. 2 E.)		
School Site No. 4	SE¼S½NE¼NE¼	Sec. 12	T. 24 S.	R. 2 E.

APPENDIX B-2 (Concluded)

CITY OF LAS CRUCES PUBLIC PURPOSE SITES

SITE	DESCRIPTION	ACREAGE
<u>Joint Facilities</u>		
Fire and Police Departments	T. 22 S., R. 2 E.,	25
Wastewater Treatment Plant	Sec. 28, W $\frac{1}{2}$ NW $\frac{1}{4}$	20
Animal Shelter		20
Southwest Mental Health		10
<u>South Fire Station and City Library Annex</u>	T. 22 S., R. 2 E., Sec. 4, Lot 11	13.23
<u>Parks</u>		
South Park	T. 22 S., R. 2 E., Sec. 33, Lot 2	25.64
North Park	T. 22 S., R. 2 E., Sec. 20, NE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ N $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$	85
North Fire Substation	T. 22 S., R. 2 E., Sec. 20, N $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$	5
Park on West Park	T. 23 S., R. 1 W., Sec. 27, W $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$	20

APPENDIX B-3

MEMORANDUMS OF UNDERSTANDING AND COOPERATIVE AGREEMENTS

NM-030-10	The Soil Conservation Service and BLM (Cooperative agreement for study sites for the Desert Soil-Geomorphology Project. These sites are 2½ acres each, with the primary purpose of gathering basic information on soils and soil-geomorphic relationships.)	Understanding to set aside certain parcels for future school sites.)
		NM-030-24 City of Las Cruces and BLM (Memorandum of Understanding that identified certain Federal lands for future development needs of the City of Las Cruces.)
NM-030-11	The NMSU College Ranch and BLM (Cooperative agreement for procedures for management of leasable materials within College Ranch.)	NM-030-26 Grant County Commissioners and BLM (Memorandum of Understanding establishing procedures for coordinating the planning and program operations at local level, ensuring that local viewpoints are taken into account in land use decision-making.)
NM-030-13	National Aeronautic and Space Administration and the Corps of Engineers (A cooperative agreement on lands in the northeast portion of the County for low profile management. No new roads, large concentrations of people, or conflicting new uses will be allowed.)	NM-030-27 Luna County Commissioners and BLM (Same as NM-030-26.)
		NM-030-28 Hidalgo County Commissioners and BLM (Same as NM-030-26.)
NM-030-14	Southern Rio Grande Council of Governments (COG) and BLM (Involvement by COG in development and revision of land use plans in Dona Ana County.)	NM-030-31 Dona Ana County Commissioners and BLM (Same as NM-030-26.)
		NM-030-37 Dona Ana County and BLM (Memorandum of Understanding closing La Union Landfill to liquid waste, installing a locked gate, posting signs and enforcing.)
NM-030-15	Southern Rio Grande Council of Governments (COG) and BLM (Involvement by COG in development and revision of land use plans in Grant, Hidalgo and Luna Counties.)	NM-030-45 National Aeronautics and Space Administration and BLM (Memorandum of Understanding to recognize land use needs of NASA (4,707.13 acres). Multiple use management to be handled by BLM-hazardous situations handled by NASA. Prohibits installation of domestic or agricultural water wells until groundwater contamination is eliminated.)
NM-030-21	Dona Ana County and BLM (Cooperative agreement to preserve the County's option to expand the Southern Dona Ana County Airport.)	
NM-030-23	Las Cruces School District No. 2 and BLM (Memorandum of	

APPENDIX C

APPENDIX C-1

MIMBRES RESOURCE AREA

ALLOTMENT CATEGORIZATION

	CATEGORY M (Maintain)	CATEGORY I (Improve)	CATEGORY C (Custodial)
MANAGEMENT OBJECTIVES	--Maintain or improve existing situation.	--Improve existing resource conditions.	--Prevent deterioration and manage in a custodial manner.
GENERAL CHARACTERISTICS	--Present ecological range condition is satisfactory. --Present management is satisfactory. --Moderate to high potential for vegetation production and is producing near potential. --Limited or no resource conflicts exist with livestock grazing. --Land status may or may not be considered (includes low percentage of public land, scattered tracts, or checkerboard land patterns within allotments). --Positive return on investment exists.	--Present ecological range condition is unsatisfactory. --Trend is apparently downward. --Present management practices are inadequate to meet long-term objectives. --Moderate to high potential for vegetation production and is producing at low to fair levels. --Resource conflicts are evident with livestock grazing. --Land status may or may not be considered (similar to Category M). --Positive economic return on public investment exists.	--Present ecological range condition is variable. --Vegetative production is relatively low. --Limited potential for improvement. --Limited or no resource conflicts exist with livestock grazing. --No positive return on investment is likely.
CATEGORY CRITERIA	--An allotment must meet all of the following conditions: 1. Has no significant resource conflicts. 2. Has only a moderate potential for improvement in forage production. 3. Has a range condition of 40 or higher and a static or improving range trend. <u>OTHER CONSIDERATIONS</u> Contains 30 percent or more public land or more than 1,540 acres public land.	--An allotment must meet any one of the following 3 conditions: 1. Has a potentially significant resource conflict. 2. Has a high to medium potential for improvement in vegetation. 3. Has a range condition rating of 50 or less and a static or declining range trend. <u>OTHER CONSIDERATIONS</u> Contains 30 percent or more public land or more than 1,540 acres public land.	--An allotment must meet all of the following conditions: 1. Has a low potential for improvement in forage production. 2. Has no significant resource conflicts. <u>OTHER CONSIDERATIONS</u> Contains less than 30 percent public land or less than 1,540 acres public land.
MANAGEMENT ACTIONS	--Livestock use would remain the same or may be increased. --High degree of management flexibility through consultation. --Low intensity supervision and monitoring. --Range improvements by private investment and range betterment funds. --Development of management plans.	--Livestock use may increase or could be decreased to meet objectives. --Proposals for resolving identified issues and conflicts include: 1. Season of use management. 2. Change in class or kind of livestock. 3. Adjust numbers of livestock. 4. Distribution management, through range improvements or use of salt/supplement. 5. Development of management plans. --High intensity supervision and monitoring.	--Livestock use would remain the same, be excluded or authorized on a seasonal basis. --High degree of management flexibility. --Low intensity supervision and monitoring. --Range improvements by private investment and range betterment funds. --Development of management plans.

Source: BLM Files 1990.

Note: Any parcel of public land, regardless of size, with an identified significant resource conflict, will qualify for the "I" category.

APPENDIX C-2

PRESENT ALLOTMENT STATUS AND CATEGORY (1991)

Allotment Number	Allotment Name	Total Preference	Management Category
01001	Beacon Hill	459	I
01002	Cottonwood	459	C
01003	J. W. Adams Estate	458	C
01004	Maverick Flat	649	I
01005	Luther W. Klump	264	M
* 01006	South Pyramid	3,336	I
01007	Blue Creek	3,360	I
01008	Mary E. Butler	1,161	I
01009	Cienega Ranch	2,492	I
01010	Steins Mountain	1,480	I
01011	L. A. Conner	478	I
01012	Gladys Croom North	1,132	I
01013	Gladys Croom South	600	C
01014	Lordsburg Mesa	1,080	C
01015	Thompson Canyon	2,772	I
01016	Thomas R. Dixon	288	I
01017	Clinton E. Dunagan	531	I
01018	Edward Elbrock	684	M
01019	Bessie A. Estes	588	I
01020	Big Cat Ranch	1,909	I
01021	Lightning Dock	540	M
01022	Cottonwood Springs	584	I
01023	Grant Harper	468	I
01024	Shakespeare Ranch	689	M
01025	Rainbow Wash	1,344	I
01026	Gold Hill Canyon	1,380	I
* 01027	George R. Jackson Jr.	972	I
01028	Robert Johns	288	C
01029	Riley Springs	193	M
01030	Alfred Johnson	1,152	I
01031	Muriel F. Johnson	60	M
01032	Four Mile Hill	628	I
01033	Elderberry Canyon	24	M
** 01034-1	Box M Ranch	1,852	I
01035	J. E. Little	120	C
01036	Steeple Rock	552	I
* 01037	Carisle	2,699	I
01038	Myra Mahan	276	C
01039	Martin Place	1,848	I
* 01040	Bass Draw	4,084	I
01041	L. B. Pasture	632	I
01042	Bobcat Hill	192	C
01043	Goat Canyon	36	C
* 01044	J. V. McCarty	1,218	I
01045	Canador Mountain	961	I
01046	Cheyne Croom	468	I
01047	Tom McCauley & Sons	4,158	I

APPENDIX C-2 (Continued)

PRESENT ALLOTMENT STATUS AND CATEGORY (1991)

Allotment Number	Allotment Name	Total Preference	Management Category
01048	Donald L. Frazier	1,750	I
01049	NM Departement Game & Fish	60	C
01050	Richard Searle	2,232	I
01051	Redrock Canyon	720	I
01052	Antelope Pass-A Hill	612	M
01053	West Divide	464	M
01055	R. M. Reynolds Estate	996	I
01057	Swallow Fork Peak	894	I
01058	Clinton E. Dunagan	156	M
01059	Mud Springs Ranch	6,240	I
01060	Andrew Monroe Smith	738	I
01061	Steeple Rock	324	M
01063	East Animas	1,210	I
01064	Andy Peterson	84	M
01065	Rosette, Inc.	96	C
01066	Pacific Western	1,056	I
01068	J. R. Walter	533	C
01069	Three Mile Hills	946	I
01070	X Triangle Ranch	1,260	I
01071	Weatherby Ranch	692	I
01072	Gage Allotment	298	C
01073	Gillespie Mountain	2,760	I
01074	Davis Browhters	216	C
01075	Redrock	180	C
01076	Robert Johns	288	I
01077	Brockman Homestead	348	M
01078	Caprock Mountain	3,950	I
01079	Mondel Flats	182	M
01080	Young Place	12	M
01081	The Raccoon Place	1,464	I
01082	China Pond	648	M
01083	East Divide	480	M
01085	Curry Place	360	M
01086	Burro Springs	3,276	I
01501	Mountain Place	528	M
01502	Mrs. Joe D. Croom	24	M
01505	Clinton Dunagan	192	M
01506	Dunagan L. & C. Co.	816	M
01507	Mrs. L. Rand	24	M
01508	Jessie Evans	1,008	M
01509	Godfrey Place	600	M
01510	Alamo Hueco	4,548	I
01511	44 Ranch	108	M
01512	Dupree Canyon	1,140	I
01513	Cottonwood Springs	108	M
01514	Burro Pass	876	M
01515	William Kambitch	132	M

APPENDIX C-2 (Continued)

PRESENT ALLOTMENT STATUS AND CATEGORY (1991)

Allotment Number	Allotment Name	Total Preference	Management Category
01516	Kimble Brothers	324	M
01517	Luther Wallace Klump	576	M
01518	Jakie McCants	36	M
01519	Cascabel Land and Cattle	192	M
01520	Post Office Canyon	336	M
01521	Edward Roos	108	M
01522	Richard C. Richards	180	M
01523	Orland Fiandaca	144	M
01524	Roark Lease	12	M
01526	Owl Canyon	2,511	M
01527	Richard Winkler	504	M
01528	Virginia Slover	312	M
01532	Upshaw	72	M
01533	Woodard Place	36	M
01534	Big Creek	324	M
01536	Darnell Lease	324	M
01537	Davis Brothers	24	M
01538	Walker Pasture	204	M
01539	Billy Darnell	156	M
01540	Birtrong Estate	204	M
01541	Hidalgo Land Company	60	M
01542	W. H. Walter, Jr.	312	M
01543	Gray Ranch	612	M
01544	Muriel F. Johnson	372	M
01545	Fred Kerr, Sr.	24	M
01546	Clinton E. Dunagan	24	M
01547	R. M. Reynolds Estate	12	M
01548	George E. Pendleton	12	M
01549	Timberlake	948	M
01550	Muir-West	120	M
01551	Myra Mahan	24	M
01553	Alan Koff	36	M
01554	Wamel Cattle Co.	42	M
01556	Keeler	540	M
01557	Maverick Spring	156	C
01560	Muir Exit Lease	288	M
02001	Edwin W. Allen	156	M
02002	W. Johnson Estate	432	I
02003	Columbus Dev. Board	1,116	C
* 02004	Allen and R. Borde	3,612	I
02005	Florida Ranch	828	M
02006	Victorio	7,788	M
02007	S. Spear Ranch	444	I
02008	Florida Foothills	516	I
02009	Hidden Valley Ranch	564	I
* 02010	Hachita	876	I
* 02011	Willow Draw	1,796	I

APPENDIX C-2 (Continued)

PRESENT ALLOTMENT STATUS AND CATEGORY (1991)

Allotment Number	Allotment Name	Total Preference	Management Category
02012	Butterfield	504	M
* 02013	Burdick Hills	12,004	I
* 02014	Cedar Grove	3,264	I
02015	Hoppy Place	1,032	I
02016	Mountain Ranch	1,248	M
02017	Flying W Ranch	3,612	I
02018	Hermanas Ranch	1,772	I
02019	Kil Ranch	1,200	I
02020	C. W. Gaines	432	M
02021	Blacktop	538	I
02022	U Bar Ranch	7,608	I
02023	Playas Ranch	4,066	M
02024	Heard Ranch	1,340	I
02025	Florida Mtn. Ranch	1,983	I
02026	Sam Teague, et al	288	M
* 02027	Hatchet Ranch	13,869	I
02028	Joe Hervol	276	C
02030	Mimbres Mtn. Rush	1,872	I
02031	Dennis Johnson	420	C
02032	W. R. Johnson & Son	3,420	I
02033	San Juan Ranch	2,424	I
02034	Mashed O Venture	12,252	I
02035	May, Inc.	1,500	I
02036	Rainbow Ranch, Inc.	1,848	I
02038	Flying Y	3,975	M
02039	Joe B. Nunn	96	I
** 02040	McClure Ranch	1,613	I
02041	Seventy-Six Draw	552	I
02042	Bisbee Hills	372	I
02043	Shelby Phillips	1,702	I
02044	J. M. Smith	3,008	I
02045	J. E. and Billie Smith	1,920	I
* 02046	Mary S. Smyer	2,362	I
02047	Fred MacKenzie	84	C
02048	Sam Teague, et al	120	C
02050	Nadine E. Moore	264	M
02051	Steeple A	2,628	M
02053	Pol West	1,032	I
02054	Southwell Ranch	2,518	I
02055	Suckerville	492	I
02501	W. T. Anderson	108	M
02502	Marguerite Benedict	144	M
02503	Red Mountain Ranch	240	M
02504	Cerro Mesa Ranch	1,056	M
02505	Black Mountain Ranch	420	M
02506	Hatcher - East	12	M
02508	James W. Hurt	708	M

APPENDIX C-2 (Continued)

PRESENT ALLOTMENT STATUS AND CATEGORY (1991)

Allotment Number	Allotment Name	Total Preference	Management Category
02509	John William Hatcher	60	M
02510	Lauro Guaderrama	24	M
02511	Joe Hervol	12	M
02512	Mrs. Claude S. Irwin	24	M
02513	Sweetwater Past	84	M
02514	G. A. Jones Lease	24	M
02515	Kretek Corporation	24	M
02516	Jesse Mauer	96	M
02517	J. L. McCauley Estate	288	M
02518	Joe Bill Nunn	144	M
02519	Simpson Lease	528	M
02520	Waterloo	528	M
02521	Richardson, et al	12	M
02522	Tony Salopek	48	M
02523	Frank Smyer	60	M
02524	Nadine Speir	612	M
02525	Cerro Mesa Ranch	120	M
02526	Benoist Lease	336	M
02528	Butterfield	180	M
02529	POL	12	M
02530	Butterfield Trail	324	M
02531	Lee Baker (East)	84	M
02532	Cienega Ranch	432	M
02533	C. W. Gaines	24	M
02534	Foster Lease	12	M
02535	Burdick Hills West	24	M
02536	Koenig Lease	36	M
02537	Shelby Phillips	136	M
02538	Border Ranch	156	M
02539	May, Inc.	252	M
02540	Mashed O Venture	36	M
02541	Acosta Lease	24	M
02542	Southwest Ranch	132	M
03001	Aden Hills	1,311	C
03002	Home Ranch	1,501	C
03003	Black Mesa	1,584	C
03004	Radium Springs	96	M
03006	Foster Canyon	12	M
03007	Charles Brewster	192	M
03008	B. and W. Cattle Co.	985	I
03009	Lazy E Ranch	3,891	I
03010	Juan Bustamante	252	M
03011	Loco	372	C
03012	Sierra Alta Ranch	1,386	M
* 03013	Corralitos Venture	13,860	I
03014	W. F. Hayner	252	I
* 03015	Alamo Basin	4,436	I

APPENDIX C-2 (Continued)

PRESENT ALLOTMENT STATUS AND CATEGORY (1991)

Allotment Number	Allotment Name	Total Preference	Management Category
03016	Pol East	5,688	I
03018	Spring Canyon	456	M
03019	Camilu-Vig, Inc.	382	M
03020	Beacon	4,104	C
03022	La Union	2,528	C
03023	Kilbourne Hole	5,741	I
* 03024	Goodsight, Inc.	5,981	I
03025	Lois Ellen Gray	360	M
* 03026	Horse Canyon	288	I
03027	O. L. Smith	444	I
03028	Hyatt and Hyatt	10,428	I
03029	West Potrillos	8,436	I
03031	Las Uvas Ranch	3,089	M
* 03032	Saddle Mountain	2,640	I
03033	Mt. Riley	5,412	C
03034	Vaughn Ranch	121	M
03035	Mt. Riley	36	M
03036	Harry J. Kane	1,080	I
03038	La Mesa	2,844	C
03039	Border Ranch	5,508	I
03040	Altamira Ranch	636	I
03041	Akela	192	C
03042	Frank J. Konyn	12	M
03043	Bill R. Ward	300	M
03044	Western Oil Company	408	C
03045	Chamberino	185	C
03047	Indian Springs	1,700	M
03048	Little Black Mountain	312	C
03051	San Diego Mountain	36	C
03056	Afton	1,284	I
* 03058	Palma Park	828	I
** 03059	Beck Land & Cattle Co.	516	M
03060	China Draw	216	M
03061	Garfield	444	C
03062	Johnson Spring	756	I
03063	Reserve	1,308	I
03064	Placita Arroyo	504	C
03065	Hille	3,168	I
03066	Johnson	192	C
03067	Rincon	960	C
03068	South Well	2,688	I
** 03097	Allan H. Beck	408	M
03098	China Draw	384	M
04501	Langford Keith	204	M
04502	F. L. McCauley Lease	984	M
04503	Pine Canyon Lease	1,140	M
04504	Onda & Associates	504	M

APPENDIX C-2 (Continued)

PRESENT ALLOTMENT STATUS AND CATEGORY (1991)

Allotment Number	Allotment Name	Total Preference	Management Category
04505	Hatcher - West	48	M
04506	Hollimon	1,332	M
04507	Lewis Brown	12	M
04508	Faywood Lease	12	I
04509	96 Creek Lease	48	M
04510	Crumbly Brothers	12	M
04511	De La O Estate	60	M
04512	Delancey Lease	60	M
04513	Upton Mountain Lease	348	M
04514	Forrest Delk	888	M
04515	Robert D. Upton	60	M
04516	Wayne Dickerson	1,020	M
04517	2C Ranch Lease	1,068	M
04518	J. McDonald Lease	168	M
04519	Whiskey Creek	120	M
04520	C. Larry Foster	60	M
04521	Foy Partnership	132	M
04522	Franks Ranch, Inc.	1,500	M
04523	Marie M. Frost	708	M
04524	Marvin Glenn	48	M
04525	Genevieve Gunter	1,620	M
04526	Harrington Ranch	120	M
04527	W. B. Hinton	180	M
04528	Mrs. Joe Hooker	780	I
04529	Pitchfork Ranch	1,104	M
04530	Casas Grandes	499	M
04531	Childress Lease	24	M
04532	Harry McCauley	48	M
04533	Marie Brock McCauley	720	M
04534	J. A. McCauley Lease	36	M
04535	Ogilvie Ranch	120	M
04536	T. Carroll Niblett	72	M
04537	Greenwood Ranch	1,008	M
04538	Three Sisters	12	M
04539	Roland Rice and Son	156	M
04540	Della W. Richardson	12	M
04541	Spires Cattle Co.	648	M
04542	Strain Lease	12	M
04543	Todd and Pugmire	132	M
04544	Boston Hill Lease	12	M
04545	Brockman Lease	24	M
04546	Wesley Brown	156	M
04547	Eby Ranch	1,224	M
04548	James E. Norris	528	M
04549	Nadine E. Moore	960	M
04550	Hooker Lease	12	M
04551	Clint Johnson, Jr.	12	M

APPENDIX C-2 (Concluded)

PRESENT ALLOTMENT STATUS AND CATEGORY (1991)

Allotment Number	Allotment Name	Total Preference	Management Category
04552	Moon Ranch	24	M
04553	Genevieve Gunter	12	M
04554	Capulin Cattle Co.	432	M
04555	Jarrell Ranch	1,136	M
04556	Reich Ranch	24	M
04557	Fierro Allotment	24	M
04598	7XV Ranch	60	I
05013	Baylor Canyon	1,716	I
15001	W. F. Blythe	1,024	I
15002	A. B. Cox Trust	1,759	I
15003	San Augustine Spring	624	M
15004	Anthony Gap	492	I
15006	Dale Hopkins	275	I
15007	Jeff Isaacks	1,905	I
15008	R. L. Isaacks	396	C
15009	Bishop's Cap	1,593	I
15010	Tex-Line	180	C
15012	S. A. Walter	168	M

Source: BLM Files, 1990.

Notes: * Indicates allotments with an Allotment Management Plan.

** Indicates allotments with an Holistic Resource Management Plan.

APPENDIX D

APPENDIX D

DESIRED PLANT COMMUNITY

The desired plant community concept used in the Las Cruces District, Mimbres Resource Area is defined as follows: A plant community that produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the land use plan goals and activity plan objectives established for the site. The desired plant community becomes the vegetation management objective for the site. The desired plant community must be consistent with the site's capability to produce the identified community through land treatments such as fire and chemical brush control and through grazing management.

Through the soils mapping done on all Federal land within the Resource Area during the 1977 to 1981 range surveys, there were 26 range sites identified using the Soil Conservation Service range site guidelines. These 26 range sites were then grouped into like sites using the vegetation potential described for the range site, soil types and occurrence within the Resource Area. An interdisciplinary team, using the above information decided on the optimal mix of perennial grasses, forbs and shrubs for each of the 12 groupings of range sites. A range of desired plant mixtures (desired vegetation) were developed and applied to these three categories consistent with the overall goals of each Alternative. Species composition for desired plant communities would be developed during the activity planning stage taking into account all the needs and uses of that particular site.

Vegetation management objectives were developed for three different Alternatives. Alternative B (the Protection-oriented Alternative), emphasizes vegetation management through grazing management and prescribed and natural fire. Alternative C (the Production-oriented Alternative), which emphasizes forage production for grazing uses and vegetation manipulation through the use of chemical herbicides and prescribed and natural fires. Alternative D emphasizes a combination of Alternatives B and C.

Using Geographic Information System (GIS) capabilities, a printout of all 26 range sites with the existing 46 possible aspect vegetation subtypes was produced. The range site/vegetation combinations were refined into 16 possible combinations. Brush species response to chemical control played a major role in the shrub species groupings. These chemical treatment areas were delineated using soils types, percent slope and distance from perennial streams as parameters. Each of the 16 types were given a desired vegetation prescription for that site. Several types, such as riparian, arroyo areas, and pinyon-juniper/oak woodland/conifer remain the same through all Alternatives. The existing baseline data on the vegetation types and range sites are on file in the Mimbres Resource Area, Las Cruces District as are the GIS maps which were developed for each Alternative showing the possible differences in desired plant community by Alternative.

APPENDIX E

APPENDIX E

CULTURAL RESOURCES

History and Inventory

PALEOINDIAN (10,000-5,000 B.C.)

The objective of the cultural resource program is to manage cultural resources on public land in a manner that protects and provides for their proper use. Cultural resources include archaeological, historic, and socio-cultural properties. Archaeological evidence indicates that portions of the Mimbres Resource Area have been occupied continuously for the past 10,000 years.

A total of 3,100 archaeological sites are recorded from Luna, Dona Ana, Grant, and Hidalgo counties. Only approximately 2 percent of public land has been subjected to Class III cultural inventories.

PALEOINDIAN (10,000-5,000 B.C.)

The Paleoindian period is generally divided into three cultural traditions: Clovis, Folsom, and Plano, with Clovis the earliest. Paleoindian occupations within the Mimbres Resource Area are known primarily from numerous reports of isolated Paleoindian projectile point surface finds. The Paleoindian period is traditionally characterized as an adaptation to the hunting of large animals or "big game hunting." Excavated Paleoindian period sites are rare within the Resource Area. The Mockingbird Gap site, which was excavated in 1968, is a Clovis period site located approximately 30 miles southeast of Socorro, New Mexico and is outside of the Mimbres Resource Area. Paleoindian material remains have been associated with numerous faunal remains including horse, tapir, camel, cervids, canids, antelope, jackrabbit, bison, and mammoth. Most Folsom and Plano period artifacts are reported from coppice dune deflated areas within the Mimbres Resource Area (LeBlanc and Whalen 1980). One Paleoindian projectile

point, a Midland point, was recently recovered from New Mexico State University (NMSU) archaeological field school excavations at Cooke's Spring near Fort Cummings within the Mimbres Resource Area. The Cloverdale Creek site in Hidalgo County is believed to contain a Folsom component. It has been suggested that Folsom period sites will occur most commonly in association with playas within the Mimbres Resource Area. Additional research into Paleoindian period settlement patterns, subsistence strategies, and social organization within the Mimbres Resource Area is needed.

ARCHAIC (5,000 B. C. - A.D. 0.)

Climatic change in the form of decreasing moisture is generally believed to have been responsible for the change from the Paleoindian to an Archaic adaptation. Much of what is known about the Archaic period in the region is from the analysis of perishable artifactual material from Tularosa and Cordova Caves in the Gila National Forest and from Bat Cave in the Socorro Resource Area. In addition, numerous excavations have been conducted at Archaic period open sites within the Mimbres Resource Area. Traditionally, the Archaic period has been characterized as small extended family groups or bands utilizing hunting and gathering subsistence strategies based on small game and intensive seasonal gathering of a wide variety of plant resources. Recovered Archaic remains include basketry, cordage, sandals, and a wide variety of artifacts manufactured from fur, feather, hide, wood, stone, and bone. Archaic groups are believed to have been highly mobile and essentially nonagricultural. Archaic remains are often represented by lithic concentrations, occasional ground stone artifacts, and small hearth features (LeBlanc and Whalen 1980). Thousands of Archaic period campsites and specialized activity areas are believed to occur within the Mimbres Resource Area.

DEVELOPMENTAL PUEBLO AND PUEBLO (A.D. 0-1540)

Mogollon-Mimbres Sequence

The Mogollon sequence contains three relatively distinct subdivisions, the Early Pithouse, Late Pithouse, and Classic period. Archaeological sites which are representative of all three of these time periods occur in relatively large numbers within the Mimbres Resource Area.

The Early Pithouse period is characterized by the beginnings of sedentary, horticulture based villages. The pithouse structures are round and the associated pottery is generally plainware. Extremely large "ceremonial" structures also occur during this period. Village size varies widely from 1 to 80 pithouse structures. Villages in this period are usually located on knolls, ridges, or mesa tops which are relatively inaccessible.

The Late Pithouse period is marked by a change in pithouse shape from round to rectangular. Villages are horticulture-based and situated on river terraces, low ridges, and relatively accessible areas. Population increases are indicated by increased village size.

In the Classic Mimbres or Surface Pueblo period, population size again increases. Structures are constructed above ground. Irrigation agriculture was probably employed. Decorated and painted pottery is common during this period. This period ends suddenly at approximately A.D. 1150 (LeBlanc and Whalen 1980).

Animas/Black Mountain Phase

In the archaeological record, the post-Mimbres period reflects changes in settlement pattern, trade relations, and social organization. The post-Mimbres period is characterized as a large population living in large sites leaving large areas uninhabited. Village sites consist of room blocks constructed around central plazas. Room size increases from the previous Mimbres period. The construction technique is puddled adobe with occasional small cobbles. Floors and walls are plastered adobe. Some of the Animas/Black Mountain Phase cultural traits are similar to those found in the Casa Grandes region of Mexico but the exact nature of the relationship is unclear (LeBlanc and Whalen 1980).

Salado Period

Animas and Salado period sites are characterized by similar construction techniques, but with the Salado sites having generally larger room blocks. In many of the Salado sites which have been tested, the villages appear to have been rapidly abandoned. Dates from Salado sites range from AD 1375 to 1450. Irrigation agriculture may have been practiced in the Salado period (LeBlanc and Whalen 1980). The post-Mimbres periods are not well defined in the Mimbres Resource Area, and further research is needed.

Jornada Mogollon

The extreme eastern edge of the Mimbres Resource Area, east of the Rio Grande is within the range of the Jornada Branch of the Mogollon. The Jornada Mogollon is also divided into the Pithouse and Pueblo periods. In the Jornada and Mimbres areas, population size increased from the early to the late Pithouse period. Very large ceremonial or communal structures are rare in the Jornada area. In both areas, the Pueblo cultures arise from in the pithouse cultures. Pueblos replaced pithouses in the Mimbres area by AD 1000 but not until AD 1200 in the Jornada area. In general, Pueblo development began sooner and reached greater heights in the Mimbres region than in the Jornada. In the Jornada area, Pueblo societies continued without significant change until their abandonment around AD 1400 (LeBlanc and Whalen 1980).

Developmental Pueblo and Pueblo Jornada Mogollon

Student archaeologists from NMSU, under the direction of Dr. Steadman Upham, excavated several small rock shelters in the Organ Mountains from 1982 through 1985. The field excavations demonstrated an occupation of the shelters beginning approximately A.D. 250 and lasting for 1,000 years. These sites would be representative of the Jornada Mogollon culture period.

THE HISTORIC PERIOD (A.D. 1540 TO PRESENT)

The first European conquest of New Mexico was initiated by Francisco Vasquez de Coronado in

1540-1542. Coronado arrived in New Mexico with 230 Spanish soldiers, 800 Indians, and 3 women. In the Rio Grande Valley, Coronado found pueblos and Indians who were weavers, potters, and farmers (Athearn 1989). These historic period pueblo groups are generally believed to have been associated with Mansos, Suma Jocomé, and Jano culture groups. In 1581, the Rodreiquez-Chamuscado expedition entered New Mexico and observed what are believed to be various Apachean groups.

In 1598, Juan de Onate lead a large expedition along the Rio Grande and across the dreaded and almost waterless 70-mile long stretch of the Camino Real known as the Jornada del Muerto. A system of Spanish caravans maintained a route which passed through the Mimbres Resource Area between Chihuahua City and Santa Fe. In 1610, a Spanish capital was established in Santa Fe. In 1680, the northern pueblos led a successful revolt and the Spanish were forced to retreat down the Camino Real to El Paso del Norte. In 1692, Diego de Vargas Zapata initiated a successful reconquest of New Mexico. An El Paso del Norte census in that same year (1692) documented a population of 382 contained in 50 households. France, Spain, and Mexico administered New Mexico as a province until the war with the United States in 1846.

The Spanish administered New Mexico as a colony until the war with the United States in 1846. After the signing of the treaty of Guadalupe Hidalgo in 1848, numerous permanent settlers located in Mesilla. Fort Filmore was established near Mesilla in 1851 and Fort Cummings near Deming in 1863 to protect the region from Apache depredations. A boundary dispute was settled with Mexico by the Gadsden Purchase of 1854 which made much of what is now the Mimbres Resource Area a part of the United States. The Butterfield Overland Mail and Stage Line was established in 1858 and allowed passengers to ride from St. Louis, Missouri to San Diego, California. The entire route from El Paso to Arizona lies within the Mimbres Resource Area. In 1861, Confederate Colonel John R. Baylor captured Fort Filmore for the Confederacy. In 1862, the confederates fled the area when 1,400 troops of the California Column, Union Army, began arriving in New Mexico. Emigrants heading west to California followed the Southern Emigrant Trail through the Mimbres Resource Area until

1881 when the railroad was completed across the Mimbres Resource Area. The coming of the railroad opened up the Mimbres Resource Area to additional settlement and fairly large scale mining development.

CULTURAL RESOURCE MANAGEMENT GOAL SYSTEM

The major cultural resources program input into the Resource Management Plan (RMP) process is to form management objectives for specific cultural resource special management areas (SMAs). These management goals are general in nature and normally do not call for specific on-the-ground actions. The three goal categories that have been incorporated into this planning effort include (1) Management for Public Values, (2) Management for Conservation, and (3) Management for Research Potential.

1. Management for Public Values

The goal of this category is the management of sites, locations, features, and objects identified as having attributes which contribute to maintaining the heritage, belief systems, folkways, and existence of a social or cultural group. Considerations for management in this category also include access to and maintenance of locations, sites, features, and objects of traditional religious or spiritual value; use and possession of sacred objects; and the freedom to worship through ceremonials and other traditional rites.

2. Management for Conservation

The goal of this category is the management of areas, sites, locations, districts, or features by removing them from consideration for scientific or historic study which would result in their physical alteration.

Properties managed under this goal could also possess one or more of these attributes: uniqueness or relative scarcity of type, class, condition, affiliation; research potential that surpasses current state of the art; or singular historic importance or architectural interest. Such cultural resource properties would remain in this category until specified provisions are met in the future.

3. Management for Information Potential

The goal of this category is the management of cultural properties so that they would remain suitable for consideration as the subject of scientific or historical study utilizing research techniques currently available. Such study could, if warranted by an approved research design, result in the controlled physical alteration of that property. A cultural property in this category need not necessarily be conserved in consideration of an approved research or data recovery (mitigation) proposal.

Management under this category could allow controlled experimental study which could also result in physical alteration to the property. This work could be performed by the BLM or other entities concerned with the management of cultural properties for purposes of obtaining specific information leading to a better understanding of kinds and rates of natural or human-caused deterioration, effectiveness of protection measures, and similar lines of inquiry which would ultimately aid in the management of cultural resources.

CULTURAL RESOURCE USE CATEGORY SYSTEM

In addition to the use allocation recommendations made through management goal category assignment during the land-use planning (RMP) stages, another vital step occurs during the next, more specific planning state, the Cultural Resource Management Plan or activity plan. This step or allocation commitment comes after the completion of the RMP which establishes the general management goals for a particular site or combination of sites. The activity plan commits specific actions and generally assigns (as part of the activity planning process) each site to one or more of the following use categories.

1. "Current scientific use" means that a cultural property is the subject of an ongoing scientific or historical study or project, under permit, at the time of evaluation. Upon completion of that study or project, the cultural property will be assigned to one of the other use categories.

2. "Potential scientific use" means that a cultural property is presently eligible for consideration as

the subject of scientific or historical study utilizing research techniques currently available, including study which would result in its physical alteration. It need not be conserved in the face of an appropriate research or data recovery (mitigation) proposal.

3. "Conservation for future use" means that a cultural property is not presently eligible for consideration as the subject of scientific or historical study which would result in its physical alteration. Reasons may include a scarcity of similar cultural properties, research potential that surpasses the current state of the art, singular historic importance or architectural interest. It is worthy of segregation from other land or resource uses which would threaten the maintenance of its present condition, and that it will remain in this use category until specified provisions are met in the future.

4. "Management use" means that a cultural property is eligible for controlled experimental study which would result in its physical alteration. Such studies could be conducted by the BLM or other entities concerned with the management of cultural properties to obtain specific information which would ultimately aid in the management of cultural properties.

5. "Socio-cultural use" means that a cultural resource is perceived by a specified social or cultural group as having attributes which contribute to maintaining the heritage or existence of that group, and is to be managed in a way that takes those attributes into account, as applicable.

6. "Public use" means that a cultural property is eligible for consideration as an interpretive exhibit-in-place, a subject of supervised participation in scientific or historical study, a subject of unsupervised collecting under permit, or related educational and recreation uses by members of the general public.

7. "Discharged use" means that a cultural property (previously qualified for assignment to any of the first six categories) no longer possesses the qualifying characteristics for that use (or for assignment to an alternative use), that records pertaining to it represent its only remaining importance, and that its location no longer presents a management constraint for competing land uses.

APPENDIX F

APPENDIX F-1

RECREATION OPPORTUNITY SPECTRUM

The Recreation Opportunity Spectrum (ROS) (BLM Manual 8320) provides a framework for stratifying and defining classes of outdoor recreation opportunities spanning the entire spectrum. The spectrum ranges essentially natural, low-use areas (resource-dependent recreation opportunities) to highly developed, intensive use areas (facility/vehicle-dependent recreation opportunities).

Recreation opportunities are expressed in terms of three principal components: the types of environmental settings available, the variety of activities possible, and the types of experiences that can be achieved through participation.

The primary determinant of ROS Classes is the setting opportunity. It describes the overall outdoor recreation environment where activity occurs, influences the types of recreation activity that can occur, and ultimately determines the resulting types of experience that can be achieved.

Activities are not bound to opportunity classes and most activities can take place in some shape or form throughout the spectrum. However, general activity opportunities can be described per ROS class.

A particular type of experience is related to the environmental setting and activity engaged in and also in individual differences based on a number of extraneous variables (such as background, education, sex, age, place of residence). The opportunity for a particular experience can be described in a general way.

DELINEATION OF ROS CLASSES

After determining the setting, activity, and experience opportunities, areas are assigned to one of six ROS Inventory Classes. Each class is delineated to identify the available outdoor recreation opportunity that exists. The six ROS classes are described in the following section.

PRIMITIVE CLASS

The setting opportunity consists of contiguous areas of about 5,000 acres, lying more than 3 miles from the nearest point of motor vehicle access. These areas are essentially unmodified natural landscapes, where there is little evidence of other people and almost completely free of management controls. Activity opportunities include overnight backpack camping, nature photography, backcountry hunting, canoeing, and snowshoeing. The experience opportunity consists of the chance to achieve a strong sense of solitude and isolation from human civilization, to feel as one with nature, and to encounter a great degree of personal risk and challenge.

SEMI-PRIMITIVE NONMOTORIZED CLASS

The setting opportunity consists of contiguous areas of about 2,500 acres, lying at least $\frac{1}{2}$ mile from the nearest point of motor vehicle access. The areas possess a predominantly natural landscape, where there are some evidences of other people, and where there are very few management controls. Activity opportunities include backpack camping, nature viewing, backcountry hunting, canoeing, and cross-country skiing. The experience opportunity consists of the possibility to avoid the sights and sounds of people, achieve a high degree of interaction with nature and to experience a great deal of personal risk and challenge.

SEMI-PRIMITIVE MOTORIZED CLASS

The setting opportunity consists of contiguous areas of about 2,500 acres, sometimes along unmaintained two-track routes. The areas have a mostly natural landscape where there are some evidences of other people (but numbers and frequency of contact seem to remain low) and where there are few management controls.

Activity opportunities include day hunting, climbing, vehicle trail riding, mountain biking, hiking, and snowmobiling. The experience opportunity consists of the chance to enjoy isolation from human civilization and technology (the lack of contacting other people), achieving a high degree of interaction with the natural environment, and feeling a moderate degree of personal risk and challenge.

ROADED NATURAL CLASS

The setting opportunity consists of areas alongside or near improved and maintained roads, with naturally appearing but human modified landscapes where there are often evidences and moderate numbers of people, and where there are visible management controls and developments. Activity opportunities consist of a mixture of resource and facility/vehicle-dependent recreation and generally include wood gathering, downhill skiing, fishing, off-highway vehicle driving, interpretative uses, motorboating, and vehicle camping. The experience opportunity consists of the chance to perceive a sense of security in the moderate number of visitor encounters and intermittent human developments available and the chance for some personal risk taking and challenges.

RURAL CLASS

The setting opportunity consists of areas alongside or near paved highways, with heavily modified landscapes where there are considerable evidences or numbers of other people, and where management controls and developments are often seen. Activity opportunities consist of mostly facility/vehicle-dependent recreation and generally include vehicle sightseeing, horseback riding, on road bicycling, golf, swimming, walking, picnicking, and outdoor competitive games. The experience opportunity consists of the chance to enjoy modern visitor conveniences, moderate to high levels of interactions with other people and a feeling of security from personal risk.

URBAN CLASS

The setting opportunity consists of areas near paved highways, where the natural landscape is dominated or replaced by human made developments, where there are great numbers and evidences of other people, and where management

controls are numerous and dominant. Activity opportunities are facility/vehicle-dependent and generally include concerts, wave pools, amusement parks, zoo/fair visits, vehicle racing facilities, spectator sports, and indoor competitive games. The experience opportunity consists of the availability of numerous modern conveniences, being entertained, encountering large numbers of people, interacting with an exotic and manicured environment, and a feeling of being very secure with personal risk subdued.

MANAGEMENT OBJECTIVES FOR ROS CLASSES

PRIMITIVE CLASS OBJECTIVE

The primitive class is managed to be essentially free from evidence of humans, human-induced restrictions, and on-site controls. Motorized vehicle use within the area is not permitted. The area is managed to maintain an extremely high probability of experiencing isolation from the sights and sounds of others (not more than three to six group encounters per day), independence, closeness to nature, self-reliance through the application of backcountry skills, and an environment that offers a high degree of challenge and risk.

Backcountry use levels and management of renewable resources is subject to the protection of backcountry recreational values. Frequency of managerial contact with users is very low.

SEMI-PRIMITIVE NONMOTORIZED CLASS OBJECTIVE

Semi-primitive nonmotorized areas are managed to be largely free from the evidence of humans, human-induced restrictions, and on-site controls. Motorized vehicle use is prohibited (except by permit). Limited facilities for the administration of livestock and visitor use are allowed, but off-site administration is encouraged. Project designs should stress protection of natural values and maintenance of the integrity of a predominantly natural environment. Areas are managed to maintain a good probability of experiencing

minimum contact with others, self-reliance through the application of backcountry skills, and an environment that offers a high degree of risk and challenge.

Backcountry use levels and management of renewable resources are dependent on maintaining ecosystems comparable to naturally occurring ecosystems. The consumption of renewable resources is subject to the protection of backcountry recreational values. Grazing is allowed, subject to restrictions placed on use of motorized vehicles. Facilities associated with grazing are limited to those necessary for maintaining existing numbers, adequate distribution, and seasons of use, consistency with allotment management plans. Mineral development is subject to valid existing rights. Frequency of managerial contact with users is low.

SEMI-PRIMITIVE MOTORIZED CLASS OBJECTIVE

Semi-primitive motorized areas are managed to provide a naturally appearing environment. Evidence of humans, restrictions, and management controls are present but subtle.

Motorized vehicle use is permitted. Concentration of users should be low. On-site interpretative facilities, low standard roads and trails, trailheads, and signing should stress the natural environment in their design and be the minimum necessary to achieve resource objectives.

The consumption of natural resources is allowed. In the review of plans of operations, utility corridors, rights-of-way, and other surface-disturbing projects, effort is taken to reduce their impacts on the natural environment. Frequency of managerial contact with visitors is low to moderate on trails and primitive roads.

ROADED NATURAL CLASS OBJECTIVE

Roaded natural areas are managed to provide a natural-appearing environment with moderate evidences of the sights and sounds of humans. Motorized use is permitted. Concentration of users is moderate with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Development of facilities for motorized use is provided for in any proposed construction standards and designs of facilities.

Placement of rights-of-way, utility corridors, management facilities, and other surface-disturbing activities would be favored over placement in semi-primitive nonmotorized or semi-primitive motorized areas when applicable. The consumption of natural resources is allowed except at proposed developed trailheads, developed recreation areas, and where geological, cultural, or natural features are interpreted as major themes. Frequency of managerial contact with visitors is moderate.

RURAL CLASS OBJECTIVE

Rural areas are managed to provide a setting that is substantially modified in foreground and background views with moderate to high evidences of the sights and sounds of civilization. Motorized use is permitted. Concentration of users is sometimes high with the evidences of other users being substantial. Resource modification and utilization practices are sometime dominant in a somewhat manicured environment. Standards for road, highway, and facility development are high for the purposes of user convenience. Frequency of managerial contact with visitors is moderate to high.

URBAN CLASS OBJECTIVE

The Mimbres Resource Area does not manage for urban types of recreation opportunities.

APPENDIX F-2

IMPLEMENTATION OF ORV DESIGNATIONS

OVERVIEW

The purpose of this appendix is to provide general information about Bureau of Land Management (BLM) policy and procedures for off-road vehicle (ORV) designations. BLM Manuals 8341 contain a more complete discussion. ORV designations are administrative, not Congressional, which allow management flexibility in order to be responsive to changes in the environment.

OBJECTIVES

All public land must be designated as "open," "limited," or "closed" to motorized vehicle use to meet public demand or needs, to protect resources and the safety of public land users, and to minimize conflicts among the various public land users and adjacent landowners. Additionally, existing ORV designations are evaluated and revised, if necessary, whenever existing Management Framework Plans (MFPs) are amended or when Resource Management Plans (RMPs) are prepared, revised, or amended.

POLICY

ORV designations are completed as an integral part of the normal BLM planning system unless problems or conflicts preclude adhering to the planning schedules.

ORV designation allocations are not contingent on the BLM land-use planning system.

Notices of ORV designations are published in the Federal Register within 1 year after completion of decisions allocating ORV use.

Designations apply to all motorized vehicles as defined by 43 Code of Federal Regulations (CFR) 8340.0-5(a) regardless of how the vehicles are being used. Only those vehicles excluded from that definition are allowed in closed areas or limited areas where use is prohibited by designation order. Necessary nonemergency use associated with BLM licenses, leases, permits, or sales may be authorized as an exclusion from that definition [see 43 CFR 8340.0-5(a)(3)] only if feasible alternatives

have been exhausted and the use is compatible with established resource management objectives. Reasonable restrictions on the types of vehicles, time of use, routes, or amount of use may be required in the authorization. Request for mineral exploration or development access under the 1872 mining law are allowed but are subject to 43 CFR 3802 and 3809.

"Open" designations are used for intensive ORV use areas where there are no special restrictions or areas where no compelling resource protection needs, user conflicts, or public safety issues exist that warrant limiting cross-country travel.

The "limited" designation is used where vehicular use must be restricted to meet specific resource management objectives. Examples of limitations include: number or types of vehicles, time or season of use, permitted or licensed use only, use limited to existing roads and trails, use limited to designated roads and trails, or other limitations necessary to meet resource management objectives (including certain competitive or intensive use areas which have special limitations).

Areas or trails are designated "closed" if it is necessary to protect resources, promote visitor safety, or reduce user conflicts. Motorized access will be allowed in closed areas by administrative personnel and permittees who have specifically requested an entrance permit consistent with other privileges.

Brochures (with maps) and other public information and educational tools (such as news releases, articles, talks to groups, environmental and resource education, etc.) inform users of opportunities and restrictions; on-site placement of signs is used to supplement these tools. Signs should be restricted to marking specific problem areas and major entry points.

DESIGNATION METHODOLOGY

Needs and concerns for resource protection, promoting public safety, and reducing conflicts associated with motorized vehicle use on public

land are identified by BLM personnel and through public involvement efforts. RMP criteria guide policy and manual direction fulfillment. The BLM assembles the appropriate data to justify ORV designations and completes new inventories when existing information is insufficient to resolve problems. The ORV designations are allocated in the formulation of RMP alternatives and decided in the selection of the preferred alternative. After approval of the selected RMP, a designation order is published in the Federal Register and entered in the District Designation Order Register. Implementation plans are then developed to define and document a specific course of action necessary to carry out the ORV allocation decision. Implementation plan recommendations are either implemented or included in activity plans for further planning considerations.

IMPLEMENTATION PLAN GUIDELINES

The implementation plan is an internal BLM document providing guidance to District and Resource Area managers on how to implement RMP decisions. It defines and documents a specific course of action necessary to achieve ORV designation decision.

By definition, the implementation plan is brief and more concise than an activity plan. It identifies only those actions that are essential to implement the ORV designation decisions. If activity plans are developed, the information from implementation plans are incorporated into them. However, the ORV implementation plan remains a separate entity to provide continuity for management programming, budgeting, program support and to respond to public requests. A copy is maintained at the District and Resource Area offices.

The plan should contain the following information:

- a map and narrative clearly showing the area's designation(s), the reasons for the designation (s), and any additional information needed to ensure public knowledge and understanding of the reasons for the designation. Design, scale, and format of maps are dependent on the detail needed to ensure adequate interpretation.

- the brochures and maps needed to notify the public of the ORV designations.

- the number, type, and location of physical constraints, such as barriers, fences, gates, ditches, etc.

- public notices needed to inform the public about details of designations (such as announcements on radio or television, newsletters, letters to key interest groups, and public meetings).

- an installation schedule for signs and physical constraints.

- methods and schedules for supervising motorized field procedures and arrangements needed to enforce compliance with ORV designation decisions including cooperative agreements, user group assistance, trespass notices, citations, arrests, or other actions.

- maintenance standards for signs and physical constraints.

- estimates of all costs, work months, and personnel needed to meet implementation requirements.

EMERGENCY LIMITATIONS OR CLOSURES

Limitations of use or closure of areas and trails on public lands to motorized vehicle use under the authority of 43 CFR 84341.2 are not ORV designations.

Whenever the authorized officer determines that motorized vehicle use will cause or is causing considerable adverse effects on resources (soil, vegetation, wildlife habitat, cultural, historic, scenic, recreation, or other resources), the area must be immediately closed to the type of use causing the adverse effects (see 43 CFR 8341.2). Emergency limitations or closures are not used if there is sufficient time to complete standard or interim designations. They must remain in force only until one of those designations can be made or until the adverse effects are eliminated and measures to prevent their recurrence have been implemented (whichever occurs first). The steps in emergency closure are listed in Table F-1.

A record of the problem identification, analysis, closure order, and action taken to inform the public is maintained in the District office and is

available for public review. The closure limitation is entered in the District Designation Order Register.

TABLE F-1
STEPS IN THE EMERGENCY CLOSURE PROCESS

STEP	ACTION	RESPONSIBILITY
Problem Identification	Identify and briefly document the problem that is causing considerable adverse effect.	As assigned
Analysis	Briefly document the adverse effects.	As assigned
Decision	Complete and publish the emergency order in the <u>Federal Register</u> .	District Manager
Implementation	Post the affected areas and notify the affected persons at the earliest date possible, using the most effective means available.	As assigned

Source: 43 Code of Federal Regulations 8342.3 and BLM Policy 1990.

Note: The above actions could be completed in a very short timeframe, a matter of hours, if necessary.

APPENDIX G

APPENDIX G

VISUAL RESOURCE MANAGEMENT

DETERMINATION OF VRM CLASS RATINGS

Visual resource classes are categories assigned to public land which serve two purposes: (1) an inventory tool that portrays the relative value of the visual resources and (2) a management tool that portrays management objectives.

Ratings from scenic quality classes, visual sensitivity levels, and distance zones are combined to form visual resource management (VRM) classes. A VRM class identifies the suggested degrees of human modification that should be allowed in a certain landscape from a visual resource standpoint.

Scenic quality classes are rated for landform, water, color, vegetation, intrusions, and uniqueness. These elements are combined, and the area is classified as Class A - unique, outstanding features; Class B - outstanding features common to the physiographic region; or Class C - features common to the physiographic region.

Sensitivity levels are determined on the basis of frequency of travel through an area, use of the area, and public knowledge of the area. These elements are rated and the area is assigned a high, medium, or low sensitivity level.

Distance zones are placed in three categories: foreground/middle ground zone, background zone, and seldom seen zone. The foreground/middle ground zone is closest to the view and requires more attention and consideration in management decisions because of the great detail that can be seen in the landscape. The background and seldom seen zones are viewed in less detail by the observer and most impacts blend with the landscape because of the distance.

CRITERIA FOR VRM CLASSES

After class ratings are completed scenic quality, visual sensitivity, and distance zones areas are assigned to one of four management classes. These classes are designed to maintain visual quality and describe the different degrees of modification to the basic elements of the landscape allowed.

CLASS I: Those areas where a management decision has been made previously to maintain a natural landscape (e.g., wilderness areas, wild sections of National Wild and Scenic Rivers, and other congressionally or administratively designated areas.

CLASS II: Landscapes with Class A scenic quality, or Class B scenic quality in the foreground/middle ground zone with high visual sensitivity. Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape.

CLASS III: Landscapes with Class B scenic quality and high visual sensitivity in the background zone, or with Class B scenic quality and medium visual sensitivity in the foreground/middle ground zone or with Class C scenery of high visual sensitivity in the foreground/middle ground zone. Changes in basic elements (form, line, color, texture) caused by management activity may be evident in the characteristic landscape; however, the changes should remain subordinate to the visual strength of the existing character.

CLASS IV: Landscapes with Class B scenic quality and high visual sensitivity in the seldom seen visual zone, or with Class B scenic quality and medium or low visual sensitivity in the

background or seldom seen zones, or with Class C scenery quality (except with high sensitivity in the foreground/middle ground zone). Changes may subordinate the original composition and character but must reflect what could be a natural occurrence within the characteristic landscape.

MANAGEMENT AND CONTRAST RATING OBJECTIVES FOR VRM CLASSES

For activities proposed on public land, impacts are evaluated with the visual resource contrast rating system, a method of evaluating the visual contrast of a proposed activity with the existing landscape character.

The amount of contrast is measured by separating the landscape into major features (land and water surface, vegetation, and structures) and then predicting the magnitude of change in contrast of each of the basic elements (form, line, color, and texture) to each of the features. Assessing the amount of contrast for a proposed activity in this manner will indicate the severity of impact and serve as a guide in determining what is required to reduce the contrast so it will meet the visual management class requirements for the area.

Objectives for the VRM classes are listed below:

CLASS I: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes;

however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

CLASS II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.

CLASS III: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

CLASS IV: The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

APPENDIX H

APPENDIX H-1

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACECs)

INTRODUCTION

This appendix contains general descriptions of the Areas of Critical Concern (ACECs) identified in this Resource Area Management Plan (RMP). This appendix also contains descriptions of six areas that were considered for proposal as ACECs but were dropped from the alternatives.

Areas of Critical Concern (ACECs) are defined in the Federal Land Policy and Management Act (FLPMA) as ". . . areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural system or processes, or to protect life and safety from natural hazards." The regulations require that potential ACECs must meet both of the following criteria:

RELEVANCE An area meets the "relevance" criteria if it contains one or more of the following:

1. A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archaeological resources and religious or cultural resources important to Native Americans).
2. A fish and wildlife resource (including but not limited to habitat for endangered, sensitive or threatened species, or habitat essential for maintaining species diversity).
3. A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).
4. Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the

relevance criteria if it is determined through the resource management planning process that it has become part of a natural process.

IMPORTANCE The value, resource, system, process, or hazard described above must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the value, resource, system, process, or hazard is characterized by one or more of the following:

1. Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
2. Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
3. Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.
4. Has qualities which warrant highlighting in order to satisfy public or management concerns about safety and public welfare.
5. Poses a significant threat to human life and safety or to property.

The proposed ACECs were identified with the assistance of a report prepared by The Nature Conservancy (TNC) in January 1990 titled "Potential Biological Special Management Areas in the Mimbres Resource Area." This report was prepared by The Nature Conservancy New Mexico Field Office for the BLM under the BLM's FY 89 Challenge Cost-Share Program. The report evaluated and identified potential biological ACECs based upon the relevance and importance criteria outlined above. Biological ACECs include riparian, special status animal or plant species, or plant communities.

The narratives in this Appendix for each ACEC include a general description, the management goals, and the management prescriptions (planned actions). The descriptive narratives of the ACECs vary due to the management attention each area has received. Some areas are not proposed as ACECs in all alternatives because, considering the objectives of the alternative, the values of other resources outweigh the need for special management attention to protect the important and relevant values, and standard management prescriptions would be sufficient to protect the values. An attempt has been made to develop management prescriptions that are as detailed as possible to avoid the time and expense of preparing activity plans for each ACEC subsequent to the RMP. In some cases, the need has been identified to develop site-specific grazing plans or other activity plans for individual ACECs. It should also be noted that regulations require a Plan of Operation for all mining activities that take place within an ACEC, if that ACEC is open to mining. Therefore, this requirement is not listed separately in the management prescriptions for each ACEC.

The proposed ACECs in this RMP are listed in alphabetical order below. Please see Maps 2-3, 2-10, 2-20, and 2-26 for the general locations of all ACECs in the Mimbres Resource Area.

LIST OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Aden Lava Flow ACEC [pages 4 and 5]
 Alamo Hueco Mountains ACEC [pages 6 and 7]
 Antelope Pass ACEC [page 8]
 Apache Box ACEC [pages 9 and 10]
 Bear Creek ACEC [page 11]
 Big Hatchet Mountains ACEC [pages 12 and 13]
 Bishop's Cap ACEC [page 14]
 Box Canyon ACEC [page 15]
 Cedar Mountains ACEC [page 16]
 Central Peloncillo Mountains ACEC [pages 17 and 18]
 Cooke's Range ACEC [pages 19 and 20]
 Cowboy Spring ACEC [page 21]
 Dona Ana Mountains ACEC [page 22]
 Fillmore Canyon ACEC [page 23]
 Florida Mountains ACEC [pages 24 and 25]
 Fort Cummings ACEC [page 26]
 Franklin Mountains ACEC [page 27]
 Gila Lower Box ACEC [pages 28 and 29]
 Gila Middle Box ACEC [page 30]

Granite Gap ACEC [page 31]
 Guadalupe Canyon ACEC [pages 32 and 33]
 Ice Canyon ACEC [page 34]
 Kilbourne Hole ACEC [page 35]
 Las Uvas Mountains ACEC [page 36]
 Lordsburg Playa ACEC [page 37]
 Los Tules ACEC [page 38]
 Massacre Peak ACEC [page 39]
 Northern Peloncillo Mountains ACEC [page 40]
 Old Town ACEC [pages 41 and 42]
 Organ Mountains ACEC [page 43]
 Organ/Franklin Mountains ACEC [pages 44 and 45]
 Paleozoic Trackways ACEC [pages 46 and 47]
 Pony Hills ACEC [page 48]
 Rincon ACEC [page 49]
 Robledo Mountains ACEC [page 50]
 San Diego Mountain ACEC [page 51]
 Tres Hermanas ACEC [page 52]
 Uvas Valley ACEC [page 53]

AREAS CONSIDERED BUT NOT PROPOSED AS ACECs

SAN SIMON CIENEGA - The Arizona portion of this area was not proposed as an ACEC in the Safford RMP. The Mimbres RMP team concluded that the biological values of the New Mexico portion alone did not meet the relevance and importance criteria. The entire area, including the Arizona portion is managed under a Habitat Management Plan (HMP).

GARDNER DAM - This small area on the West Mesa, southwest of Las Cruces, was nominated as an ACEC in comments received by the public during the scoping period. The RMP team concluded that this area did not meet any of the relevance and importance criteria because there are no significant resource qualities.

EAST POTRILLO MOUNTAINS - This area located southwest of Las Cruces was marginally recommended by TNC as an ACEC. After further review, the RMP team concluded that the area does not meet any of the relevance and importance criteria because there are no significant resource qualities.

WEST POTRILLO MOUNTAINS - This large area is located west of Las Cruces and is currently a Wilderness Study Area (WSA). After review by TNC and the RMP team, it was concluded that

this area does not meet the relevance criteria because it does not contain significant resource qualities (historic, cultural, scenic, fish and wildlife or other natural systems or processes). It can, however, be protected by other means such as restricting rights-of-way, minerals activities, and vehicle uses (as outlined in sections on other issues and management concerns) without designation as an ACEC.

PYRAMID MOUNTAINS - This area located south of Lordsburg was initially considered for evaluation by TNC but after extensive consultation did not appear to have sufficient biological value for further consideration. The RMP team also concluded that the area did not meet any of the relevance or importance criteria because there are no significant resource qualities.

APACHE HILLS/SIERRA RICA - This area located southwest of Deming (between the Big

Hatchet Mountains and Cedar Mountains) was initially considered for evaluation by TNC but after extensive consultation did not appear to have sufficient biological value for further consideration. The RMP team also concluded that the area did not meet any of the relevance or importance criteria because there are no significant resource qualities.

BURRO MOUNTAINS - This area located on the lower western slopes of the Burro Mountains contains mostly scattered parcels of public land, some contiguous with the Gila National Forest. The area was evaluated by TNC and was not recommended for ACEC designation. The RMP team also concluded that the area does not meet any of the relevance and importance criteria because there are no significant resource qualities.

ADEN LAVA FLOW ACEC

GENERAL DESCRIPTION

The proposed Aden Lava Flow ACEC is located in central Dona Ana County and is approximately 20 miles southwest of Las Cruces, New Mexico. The size of the proposed ACEC varies between management alternatives (see planned actions below). The lava flow is a nearly flat landform with steep walled depressions which vary in size and shape. The area also contains crevices, pressure ridges, and lava tubes. The most prominent feature of the lava flow is Aden Crater located in the northwest part of the area and is currently designated as a Research Natural Area (RNA). ACEC designation will replace the RNA designation. The area has significant scenic and geologic values as well as interesting wildlife and wildlife habitat features.

The Aden Crater Lava Flow meets the BLM's relevance criteria because of its outstanding natural character and its research and educational potential for the unique lava habitat type and melanistic wildlife species. The area meets the importance criteria because it warrants recognition in order to satisfy public or management concerns.

MANAGEMENT GOALS

Manage to protect biological, scenic, geological, and research values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) Not an ACEC

ALTERNATIVE B - 26,250 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Develop grazing activity plan.
- Research and interpret paleontological and geological features.

- Establish research permitting/information exchange process.
- Designate parking area (¼ acre) and trail to Crater.
- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into Wilderness Management Policy (WMP).
- Manage for Recreation Opportunity Spectrum (ROS) primitive and semi-primitive nonmotorized classes.

ALTERNATIVE C - 3,930 ACRES

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Designate no surface occupancy (NSO) for fluid mineral leasing.
- Develop grazing activity plan.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Research and interpret paleontological and geological features.
- Establish research permitting/information exchange process.
- Designate parking area (¼ acre) and trail to Crater.
- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

ALTERNATIVE D - 26,250 ACRES

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Develop grazing activity plan.

- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Research and interpret paleontological and geological features.
- Establish research permitting/information exchange process.
- Designate parking area (¼ acre) and trail to Crater.

- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into RMP.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

ALAMO HUECO MOUNTAINS ACEC

GENERAL DESCRIPTION

The proposed Alamo Hueco Mountains ACEC is located in southeast Hidalgo County approximately 80 miles southeast of Lordsburg, New Mexico. The size of the proposed ACEC varies between the management alternatives (see planned actions below). The Alamo Huecos are volcanic mountains featuring open grasslands or shrub/grasslands on the foothills and lower slopes leading to shrub/grass communities higher up, with distinct riparian communities in the more pronounced drainages. The area features diverse plant and animal communities, cultural and paleontological resources, and scenic qualities.

The proposed Alamo Hueco Mountains ACEC meets the BLM's ACEC relevance criteria because the site contains numerous State-listed and Federal candidate plant and animal species, desert bighorn sheep habitat, cultural and paleontological values, and scenic values. The area meets the BLM's ACEC importance criteria because its values are vulnerable to adverse change and require special management and protection.

MANAGEMENT GOALS

Manage to protect biological (especially bighorn sheep and riparian), scenic, cultural, and paleontological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 16,260 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access to boundary, with parking areas (½ acre) trailheads.
- Eliminate livestock grazing.

- Manage as Class II for air quality.
- Exclude heavy equipment for fire suppression.
- Carry forward all provisions of existing HMP.
- Conduct/encourage archaeological and paleontological surveys.
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated in WMP.
- Riparian enhancement projects (such as fencing) upon any acquisition of private land (10 miles of fence).
- Manage ROS primitive and semi-primitive nonmotorized classes.

ALTERNATIVE C - 4,670 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Acquire legal access to boundary, with parking areas (½ acre) and trailheads.
- Set carrying capacity on Section 15 lands and initiate grazing activity plan.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Manage as Class II for air quality.
- Exclude heavy equipment for fire suppression.
- Carry forward all provisions of existing HMP.
- Conduct/encourage archaeological and paleontological surveys.
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated in WMP.
- Riparian enhancement projects (such as fencing) upon any acquisition of private land (10 miles of fence).
- Manage ROS primitive and semi-primitive nonmotorized classes.

ALTERNATIVE D - 16,260 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access to boundary, with parking areas ($\frac{1}{2}$ acre) and trailheads.
- Set carrying capacity for the Section 15 portion of the grazing allotment and initiate grazing activity plan.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Manage as Class II for air quality.
- Exclude heavy equipment for fire suppression.
- Carry forward all provisions of existing HMP.
- Conduct/encourage archaeological and paleontological surveys.
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated in WMP.
- Riparian enhancement projects (such as fencing) upon any acquisition of private lands (10 miles of fence).
- Manage for ROS primitive and semi - primitive nonmotorized classes.

ANTELOPE PASS

GENERAL DESCRIPTION

The proposed Antelope Pass ACEC is located in west central Hidalgo County approximately 35 miles south of Lordsburg, New Mexico and 6 miles west of Animas, New Mexico. The size of the proposed ACEC is 8,710 acres. Antelope Pass is a low east-west gap across the Peloncillo Mountains and features several State-listed and Federal candidate plant and animal species as well as a great diversity of lizard species.

The proposed Antelope Pass ACEC meets the BLM's ACEC relevance criteria because the area contains 19 known species of lizards, two of which are State-listed or Federal candidate species. The area meets the BLM's importance criteria because it has more than locally significant qualities that are unique and require special management and protection.

MANAGEMENT GOALS

Manage to protect biological values, especially lizard diversity and Dixon's whiptail habitat.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 8,710 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Allow natural fires to burn within prescribed conditions.
- Herpetological collecting in accordance with New Mexico Department of Game and Fish (NMDGF) regulations.

- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized and semi-primitive motorized classes.

ALTERNATIVE C - 8,710 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Allow natural fires to burn within prescribed conditions.
- Herpetological collecting in accordance with NMDGF regulations.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized and semi-primitive motorized classes.

ALTERNATIVE D - 8,710 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Allow natural fires to burn within prescribed conditions.
- Herpetological collecting in accordance with NMDGF regulations.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized and semi-primitive motorized classes.

APACHE BOX ACEC

GENERAL DESCRIPTION

The proposed Apache Box ACEC is located in southwest Grant County approximately 18 miles south of Mule Creek. The size of the proposed ACEC is 1,830 acres. Apache Box is a sheet-walled narrow canyon with cliffs over 500 feet high and a nearly pristine riparian area found in the bottom of the box. Also within the proposed ACEC are found several Federal, State-listed, and Federal candidate plant and animal species, numerous cultural resources, a globally rare plant community, and high scenic values.

The Apache Box meets the BLM's ACEC relevance criteria because of the Federal and State-listed species, rare plant communities, and cultural and scenic values. The area meets the importance criteria because it has qualities that make it unique, threatened and vulnerable to adverse change warranting special management protection.

MANAGEMENT GOALS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 2,630 acres

- Retain all public land; acquire all adjacent State trust and private lands.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Conduct validity exam on existing mining operations.
- Acquire administrative access.
- Exclude livestock grazing.
- Allow natural fires to burn within prescribed conditions in upland areas.
- Exclude heavy equipment for fire suppression.
- Conduct thorough archaeological survey.
- Install protective grates in three rock shelters to exclude pothunters.
- Safety/"no shooting" restriction yearlong.
- Exclude camping.

- Manage as VRM Class I.
- Manage for ROS primitive and semi-primitive nonmotorized.

ALTERNATIVE C - 2,630 acres

- Retain all public land; acquire all adjacent State trust and private lands.
- Close to vehicle use February 1-August 15, otherwise limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Open to locatable mineral entry with mining plan required.
- Acquire legal public access.
- Develop livestock grazing plan to protect or enhance riparian values and change to "I" category allotment.
- Exclude heavy equipment for fire suppression.
- Allow natural fires to burn within prescribed conditions in upland areas.
- Consider selected thinning of alligator juniper to maintain grassland areas.
- Conduct thorough archaeological survey.
- Install protective grates in three rock shelters to exclude pothunters.
- Exclude camping February 1-August 15.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized and semi-primitive motorized classes.

ALTERNATIVE D - 2,630 acres

- Retain all public land; acquire all adjacent State trust and private lands.
- Close to vehicle use (except for administrative use).
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Conduct validity exam on existing mining operations.
- Acquire legal public access.
- Develop livestock grazing plan to protect or enhance riparian values and change to "I" category allotment.

- Exclude heavy equipment for fire suppression.
- Allow natural fires to burn within prescribed conditions in upland areas.
- Conduct Class III archaeological survey.
- Install protective grates in three rock shelters to exclude pothunters.
- Safety/"no shooting" restriction February 1-August 15.
- Manage as VRM Class I.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

BEAR CREEK ACEC

GENERAL DESCRIPTION

The proposed Bear Creek ACEC is located in central Grant County approximately 15 miles northwest of Silver City, New Mexico. The size of the area is 1,480 acres. Bear Creek is a riparian area about a mile and a half long. The uplands above the riparian area are comprised of a pinyon/juniper woodland which give way to the riparian area which includes small cliffs and box canyon. The riparian area contains a perennial stream with an Arizona sycamore/Fremont cottonwood plant community.

Bear Creek meets the BLM's ACEC relevance criteria because of the scarcity of Arizona sycamore/Fremont cottonwood riparian plant community examples that remain in reasonably pristine condition. The area meets the importance criteria because it has qualities which warrant highlighting in order to satisfy public or management concerns.

MANAGEMENT GOALS

Manage to protect riparian values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 1,480 acres

- Retain all public land; acquire all State trust and private lands between the two parts of the ACEC
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire administrative access.
- Install gap fences to exclude livestock grazing ($\frac{1}{2}$ mile of fence).
- Conduct archaeological survey.
- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

ALTERNATIVE C - Not proposed as an ACEC.

ALTERNATIVE D - 1,480 acres

- Retain all public land; acquire all State trust and private lands between the two parts of the ACEC.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire administrative access.
- Install gap fences to exclude livestock grazing ($\frac{1}{2}$ mile of fence).
- Conduct archaeological survey.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

BIG HATCHET MOUNTAINS ACEC

GENERAL DESCRIPTION

The proposed Big Hatchet Mountains ACEC is located in southeast Hidalgo County approximately 15 miles south of Hatchita, New Mexico. The size of the proposed ACEC varies between the management alternatives (see planned actions below). The Big Hatchets are comprised of limestone and reach an elevation of 8,860 feet at Big Hatchet Peak. The mountain range runs northwest to southeast with diverse vegetation types at different elevations and aspects. There are several Federal and State-listed plants and animals found in the mountain range.

The Big Hatchet Mountains meet the BLM's relevance criteria because of the several Federal and State-listed plants and animals, desert bighorn sheep habitat, and diverse vegetation types found throughout the area. The area meets the importance criteria because it has qualities that make it rare, unique and vulnerable to adverse change and require special management and protection.

MANAGEMENT GOALS

Manage to protect biological (especially bighorn sheep) and scenic values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 67,960 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access to north and west sides.
- Eliminate livestock grazing.
- Manage as Class II for air quality.

- Allow natural fires to burn within prescribed conditions.
- Exclude heavy equipment for fire suppression.
- Continue all provisions of existing HMP (maintenance of water developments and prescribed burning).
- Conduct archaeological survey.
- Manage for primitive recreation opportunities (no developed facilities).
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS primitive and semi - primitive nonmotorized classes.

ALTERNATIVE C - 4,390 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Acquire legal public access to north and west sides.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Manage as Class II for air quality.
- Allow natural fires to burn within prescribed conditions.
- Exclude heavy equipment for fire suppression.
- Revise present Allotment Management Plan (AMP) to address wildlife concerns.
- Continue all provisions of existing HMP (maintenance of water developments and prescribed burning).
- Conduct archaeological survey.
- Manage for primitive recreation opportunities (no developed facilities).
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.

- Manage for ROS primitive and semi-primitive nonmotorized classes.

ALTERNATIVE D - 47,180 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access to north and west sides.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Manage as Class II for air quality.

- Allow natural fires to burn within prescribed conditions.
- Exclude heavy equipment for fire suppression.
- Revise present AMP to address wildlife concerns.
- Continue all provisions of existing HMP (maintenance of water developments and prescribed burning).
- Conduct archaeological survey.
- Manage for primitive recreation opportunities (no developed facilities).
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

BISHOP'S CAP ACEC

GENERAL DESCRIPTION

The proposed Bishop's Cap ACEC is located in east-central Dona Ana County approximately 12 miles southeast of Las Cruces, New Mexico. The size of the proposed ACEC is 1,930 acres. Bishop's Cap is a series of connected ridges and hills reaching an elevation of 5,419 feet on Bishop's Cap. The area is underlain by the Fusselman Dolomite Formation which provides habitat for a Federally-listed cactus. The area also supports a high diversity of other cactus and a rare land snail known only from this location.

Bishop's Cap meets the BLM's relevance criteria because it contains the best known habitat for a Federally-listed cactus as well as supporting a diverse cactus community. This area meets the importance criteria because it has qualities that make it unique and vulnerable to adverse change warranting special management and protection.

MANAGEMENT GOALS

Manage to protect biological and scenic values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - Included in Organ/Franklin Mountains ACEC

ALTERNATIVE C - 1,930 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Manage as VRM Class I.
- If designated NCA, ACEC designation would terminate and ACEC management prescriptions would be incorporated into management plan.
- Manage other uses in accordance with Organ Mountains Coordinated Resource Management Plan.
- Manage for ROS semi-primitive motorized class.

ALTERNATIVE D - Included in Organ/Franklin Mountains ACEC.

BOX CANYON ACEC

GENERAL DESCRIPTION

Box Canyon is a small, desert canyon 3 miles north of the Las Cruces Crawford Airport in central Dona Ana County. A large rock and concrete dam was built in Box Canyon by the Civilian Conservation Corp (CCC) in 1933. The dam retains seasonal runoff water, and allows it to trickle slowly down the canyon bottom below, creating a small riparian area approximately 100 yards long. Local environmentalists enjoy the small canyon for its rugged beauty.

Box Canyon meets the relevance criteria because of its wildlife and riparian values and because the dam is a significant historic feature, the largest CCC structure in Dona Ana County and the closest to Las Cruces. It meets the importance criterion because it is a small area that is vulnerable to adverse change from recreation use including shooting and off-road vehicles, and the dam is irreplaceable.

MANAGEMENT GOALS

Manage to protect biological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 600 acres

- Retain all public land.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Continue existing livestock grazing activity plan.
- Establish fuelwood cutting to control salt cedar.

- Manage for bird watching and outdoor education.
- Establish safety/"no shooting" area.
- Manage as VRM Class II.
- Plant native species (cottonwood and willow), and fence arroyo habitat below dam (½ mile of fence).
- Support Cooperative Agreement with the Southern New Mexico Coalition of Conservation Organizations for management of the area.
- Manage for ROS semi-primitive nonmotorized and semi-primitive motorized classes.

ALTERNATIVE C - Not proposed as an ACEC.

ALTERNATIVE D - 600 acres

- Retain all public land.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral materials sales.
- Close to fluid mineral leasing.
- Continue existing livestock grazing activity plan.
- Establish fuelwood cutting to control salt cedar.
- Manage for bird watching and outdoor education.
- Establish safety/"no shooting" area.
- Manage as VRM Class II.
- Plant native species (cottonwood and willow), and fence arroyo habitat below dam (½ mile of fence).
- Support Cooperative Agreement with the Southern New Mexico Coalition of Conservation Organizations for management of the area.
- Maintain ROS semi-primitive nonmotorized and semi-primitive motorized classes.

CEDAR MOUNTAINS ACEC

GENERAL DESCRIPTION

The proposed Cedar Mountains ACEC is located in southwest Luna County approximately 12 miles east of Hatchita, New Mexico. The size of the proposed ACEC is 15,020 acres. The Cedars are mostly rounded rolling hills interspersed with valleys and a few higher peaks. The numerous valleys and draws provide suitable habitat for many species of wildlife.

The Cedar Mountains meet the BLM's relevance criteria because they provide habitat which maintains species diversity in the surrounding area. The area meets the importance criteria because it has qualities which warrant highlighting in order to satisfy public or management concerns.

MANAGEMENT GOALS

Manage to protect biological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 15,020 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Exclude livestock grazing.
- Allow natural fires to burn within prescribed conditions
- Manage as VRM Class II.
- If designated as wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS semi-primitive and semi-primitive motorized classes.

ALTERNATIVE C - Not proposed as an ACEC.

ALTERNATIVE D - Not proposed as an ACEC.

CENTRAL PELONCILLO MOUNTAINS ACEC

GENERAL DESCRIPTION

The proposed Central Peloncillo Mountain ACEC is located in southwest Hidalgo County approximately 25 miles southwest of Animas, New Mexico. The size of the area is 12,750 acres. This area consists of the most rugged and remote portion of the Peloncillo Mountains. The area is dominated by a major ridge which runs north/south with peaks, smaller hills and ridges, all separated by canyons of various sizes. The location and orientation of these mountains provide a natural passage for unique wildlife from Mexico into the U.S.

The Central Peloncillo Mountains meet the BLM's relevance criteria because they provide habitat for several State-listed plants and animals, support one of the most extensive and well-developed examples of Madrean evergreen woodland in New Mexico, provide opportunities for scientific research of vegetation and wildlife, and have outstanding scenic values. The area meets the importance criteria because it has qualities that are unique, exemplary, and vulnerable to adverse change warranting special management and protection.

MANAGEMENT GOALS

Manage to protect biological (bighorn sheep and habitat diversity), research, and scenic values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - 3,740 acres

- Manage as per existing Central Peloncillo Mountains ACEC management plan:
 - Prohibit permanent structures.
 - Prohibit manipulative practices or research.
 - Exclude new ROWs and easements.
 - Prohibit introduction of exotic plants and animals.
 - Control wildlife populations by natural processes.

ALTERNATIVE B - 12,750 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Eliminate livestock grazing.
- Develop prescribed burn plan.
- Allow natural fires to burn within prescribed conditions.
- Exclude heavy equipment for fire suppression.
- Continue provisions of existing HMP.
- Manage for primitive recreation opportunities (no developed facilities).
- Manage as VRM Class I.
- Retain exiting ACEC management plan for Post Office Canyon Allotment.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

ALTERNATIVE C - 12,750 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Acquire legal public access.
- Exclude livestock from Owl Canyon and Post Office Canyon Allotments, develop livestock grazing management plan for remainder, and change all allotments to "I" category.
- Develop prescribed burn plan.
- Allow natural fires to burn within prescribed conditions.
- Exclude heavy equipment for fire suppression.
- Continue provisions of existing HMP.
- Manage for primitive recreation opportunities (no developed facilities).
- Manage as VRM Class I.

- Retain existing ACEC management plan for Post Office Canyon Allotment.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

ALTERNATIVE D - 12,750 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Exclude livestock from Owl Canyon and Post Office Canyon Allotments, develop livestock grazing management plan for remainder, and change all allotments to "I" category.

- Develop prescribed burn plan.
- Allow natural fires to burn within prescribed conditions.
- Exclude heavy equipment for fire suppression.
- Continue provisions of existing HMP.
- Manage for primitive recreation opportunities (no developed facilities).
- Manage as VRM Class I.
- Retain existing ACEC management plan for Post Office Canyon Allotment.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

COOKE'S RANGE ACEC

GENERAL DESCRIPTION

The proposed Cooke's Range ACEC is located in north central Luna County approximately 15 miles northeast of Deming, New Mexico. The size of the area varies between management alternatives (see planned actions below). The Cooke's Range is dominated by Cooke's Peak which rises to 8,408 feet. The range spreads out from the peak to the north and south and consists of lower peaks and numerous steep ridges.

Cooke's Range meets the BLM's relevance criteria because it provides habitat for several State-listed and State-sensitive plants. The area is also rich in cultural resources, has the only population of Arizona cypress in New Mexico, and has excellent scenic values. The area meets the importance criteria because it has qualities that are rare, sensitive, and vulnerable to adverse change warranting special management and protection.

MANAGEMENT GOALS

Manage to protect biological, scenic, and cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 23,160 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.
- Maintain existing C&MU classification for minerals until protective withdrawal established.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Exclude livestock grazing.
- Develop prescribed burn plans.

- Exclude heavy equipment for fire suppression.
- Allow natural fires to burn within prescribed conditions.
- Incorporate provisions of existing Cultural Resource Management Plan for Fort Cummings.
- Conduct archaeological surveys.
- Develop stabilization plans for historic mining towns.
- Interpret the petroglyphs through signs and tours.
- Manage for primitive recreation opportunities.
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate on that portion and ACEC management prescriptions would be incorporated into WMP. Other portions would remain as ACECs.
- Fence springs to protect riparian areas (1 mile of fence).
- Manage for ROS primitive and semi-primitive nonmotorized classes.

ALTERNATIVE C - 4,440 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Acquire legal public access.
- Develop livestock grazing activity plan.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Develop prescribed burn plans.
- Exclude heavy equipment for fire suppression.
- Allow natural fires to burn within prescribed conditions.
- Develop stabilization plans for historic mining plans.
- Fence springs to protect riparian areas (1 mile of fence).
- Manage for ROS semi-primitive nonmotorized classes.

ALTERNATIVE D - 23,160 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Develop livestock grazing activity plan.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Develop prescribed burn plans.
- Exclude heavy equipment for fire suppression.
- Allow natural fires to burn within prescribed conditions.
- Incorporate provisions of existing Cultural Resource Management Plan for Fort Cummings.
- Conduct archaeological surveys.
- Develop stabilization plans for historic mining towns.
- Interpret the petroglyphs through signs and tours.
- Manage for primitive recreation opportunities.
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate on that portion and ACEC management prescriptions would be incorporated into WMP. Other portions would remain as ACECs.
- Fence springs to protect riparian areas (1 mile of fence).
- Manage for ROS primitive and semi-primitive nonmotorized classes.

COWBOY SPRING ACEC

GENERAL DESCRIPTION

The proposed Cowboy Spring ACEC is located in south-central Hidalgo County, approximately 50 miles south of Lordsburg, New Mexico. It is characterized by mid-elevation hills interspersed with long shallow canyons that support seasonal flows. The hills and canyons support dense grass stands, sacahuista, and Madrean evergreen woodland communities dominated by Emory oak. The canyon bottoms support riparian wildlife species including frog and turtle populations despite the lack of perennial surface water. Several State endangered species also occur in the proposed ACEC including the white-eared hummingbird and the thick-billed kingbird.

The proposed ACEC meets the relevance criteria by providing habitat for a diverse fauna and flora typical of the Mexican highlands and unusual for public land. The biota includes endangered plant and animal species, and protection of the Cowboy Springs area is important for maintaining species diversity on public land in New Mexico. The area meets the importance criteria because the diverse and unusual biota is more than locally significant since this habitat type is very poorly represented on public land, and it has been recognized as warranting protection in order to satisfy a National priority when it was recommended as suitable for wilderness designation by the BLM Director.

MANAGEMENT GOALS

Manage for protection of biological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 6,740 acres

- Retain all public land; acquire adjacent State trust land.

- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Maintain current livestock grazing practices.
- Allow natural fires to burn within prescribed conditions.
- Exclude heavy equipment for fire suppression.
- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS primitive class.

ALTERNATIVE C - Not proposed as an ACEC.

ALTERNATIVE D - 6,740 acres

- Retain all public land; acquire adjacent State trust land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Maintain current livestock grazing practices.
- Allow natural fires to burn within prescribed conditions.
- Exclude heavy equipment for fire suppression.
- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS primitive class.

DONA ANA MOUNTAINS ACEC

GENERAL DESCRIPTION

The Dona Ana Mountains are located in central Dona Ana County approximately 5 miles north of Las Cruces. They are characterized by steep jagged peaks rising abruptly from the desert floor. Vegetation is mostly grasses and shrubs, with some scattered juniper trees. The peaks are highly scenic, and are within the view of most of the northern Mesilla Valley and the northeast portion of Las Cruces. The proposed ACEC features a high diversity of cacti in addition to the scenic qualities. The State endangered Dona Ana Mountains *sonorella* (a land snail) occurs only in these mountains.

The Dona Ana Mountains meet the relevance criteria because of both the scenic quality and the significant wildlife resources including the *sonorella* and its habitat. The area meets the importance criteria because the proximity to Las Cruces and the high recreation use levels of the area make the relevant resources vulnerable to adverse change.

MANAGEMENT GOALS

Manage for protection of biological, scenic, and cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 1,490 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.

- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Maintain current livestock grazing practices.
- Exclude feral goats and other exotic animals.
- Close roads that provide access for illegal plant collecting.
- Manage for primitive and semi-primitive recreational opportunities.
- Manage as VRM Class I.
- Manage for ROS semi-primitive nonmotorized and semi-primitive motorized classes.

ALTERNATIVE C - Not proposed as an ACEC

ALTERNATIVE D - 1,490 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Maintain current livestock grazing practices.
- Exclude feral goats and other exotic animals.
- Close roads that provide access for illegal plant collecting.
- Manage for primitive and semi-primitive recreational opportunities.
- Develop primitive campsites in the "bowl" on north side (10 acres).
- Manage as VRM Class I.
- Manage for ROS semi-primitive nonmotorized, semi-primitive motorized, and roaded natural classes.

FILLMORE CANYON ACEC

GENERAL DESCRIPTION

The proposed Fillmore Canyon ACEC is located in east-central Dona Ana County on the east side of the Organ Mountains. The area consists of a major canyon between the mozonitic and rhyolitic portions of the Organs and includes a limestone belt. The canyon bottom supports the most well-developed riparian area in the Organs, the diversity of which is accentuated by the different parent materials and soil types. The State endangered Organ Mountains chipmunk, Organ Mountains evening primrose, and Organ Mountains pincushion cactus occur within the proposed ACEC.

The area meets the relevance and importance criteria by having significant endangered species and riparian habitat resources that are more than locally significant and are vulnerable to adverse change.

MANAGEMENT GOALS

Manage to protect biological, scenic, cultural, and riparian values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - Included in Organ/Franklin Mountains ACEC

ALTERNATIVE C - 70 acres

- Retain all public land; acquire all adjacent private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Manage as VRM Class I.
- Manage in accordance with Organ Mountains Coordinated Resource Management Plan.
- If designated NCA, ACEC designation would terminate and ACEC management prescriptions would be incorporated into management plan.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE D - Included in Organ/Franklin Mountains ACEC.

FLORIDA MOUNTAINS ACEC

GENERAL DESCRIPTION

The Florida Mountains are located in central Luna County approximately 8 miles southeast of Deming. The Floridas are characterized by spectacular jagged spires and multi-colored cliffs of Precambrian granite overlain in places by Ordovician limestone. The mountains support vegetation types ranging from lower Sonoran to Upper Sonoran life zones, with tremendous diversity created by the myriad aspects within the steep cliffs. The area features spectacular scenery as well as State-listed endangered plant and animal species. Several springs in the mountain range form small riparian zones that increase the values of surrounding wildlife habitat and enhance biodiversity within the mountain range.

The Florida Mountains meet the relevance criteria of significant scenic values, wildlife resources including the State-listed Florida Mountains oreohelix, natural systems including endemic and relict plant communities, and natural hazards. The Floridas meet the importance criteria because of the sensitive visual resources and endangered species which could be vulnerable to adverse change from mining or ibex use.

MANAGEMENT GOALS

Manage for protection of scenic values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 22,360 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.

- Manage as Class II for air quality.
- Develop livestock grazing activity plan.
- Allow natural fire to burn within prescribed conditions where private property not affected.
- Exclude heavy equipment for fire suppression.
- Eliminate the Persian ibex.
- Reintroduce desert bighorn sheep.
- Incorporate provisions of Florida Mountains HMP (except management for ibex).
- Manage for primitive and semi-primitive recreational opportunities.
- Develop parking areas/signing (1 acre).
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS primitive, semi-primitive nonmotorized, and semi-primitive motorized classes.

ALTERNATIVE C - 5,670 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Acquire legal public access.
- Manage as Class II for air quality.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Allow natural fire to burn within prescribed conditions where private property not affected.
- Exclude heavy equipment for fire suppression.
- Incorporate all provisions of Florida Mountains HMP.
- Manage for primitive and semi-primitive recreational opportunities.
- Develop parking areas/signing (1 acre).
- Develop trails and primitive hunter camps (2 acres).
- Manage as VRM Class I.

- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS primitive class.

ALTERNATIVE D - 22,360 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Develop livestock grazing activity plan.
- Develop prescribed burn plans.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Exclude heavy equipment for fire suppression.

- Allow natural fires to burn within prescribed conditions.
- Incorporate provisions of existing Cultural Resource Management Plan for Fort Cummings.
- Conduct archaeological surveys.
- Develop stabilization plans for historic mining towns.
- Interpret the petroglyphs through signs and tours.
- Manage for primitive recreation opportunities.
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate on that portion and ACEC management prescriptions would be incorporated into WMP. Other portions would remain as ACECs.
- Fence springs to protect riparian areas (1 mile of fence).
- Manage for ROS primitive, semi-primitive nonmotorized, and semi-primitive motorized classes.

FORT CUMMINGS ACEC

GENERAL DESCRIPTION

Fort Cummings is located about 15 miles northeast of Deming. It was established near Cooke's Spring along the southern emigrant trail in 1863. Cooke's Spring was one of the few watering places between Mesilla, New Mexico and Tucson, Arizona. The original post was rectangular in shape and 320 feet x 366 feet in size. The entire post was surrounded by a 10 foot adobe wall. The purpose of the Fort was to protect travelers on the emigrant trail from Apache depredations. Some Army operations out of Fort Cummings resulted in Medal of Honor awards and Apache campaigns were mounted from the fort. Black infantry and cavalry regiments were stationed at Fort Cummings. The Fort was occupied intermittently from 1863 to the 1890's.

Fort Cummings could well be the primary New Mexico Apache wars military installation during the late 1860's and again in the early 1880's. The record of troop accomplishments at Fort Cummings give the site high historical significance. The Fort is considered by scholars to have local and regional historical and archaeological significance. The remains of the Fort, springhouse, and adjacent Mimbres village are fragile cultural resources which are deserving of stabilization, preservation, protection, research, and visitor interpretation. In 1990 a Cultural Resource Management Plan was written for the Fort.

The Fort Cummings ACEC meets the BLM's relevance criteria because it is a significant historic and cultural resource. The Fort Cummings ACEC meets the BLM's ACEC importance criteria because it is a fragile, sensitive, rare, irreplaceable,

endangered, threatened, and vulnerable cultural resource.

MANAGEMENT GOALS

Manage to protect important historic resources.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - Included in Cooke's Range ACEC

ALTERNATIVE C - 290 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Incorporate provisions of existing Fort Cummings Cultural Resource Management Plan.
- Interpret with emphasis on facilities development.
- Manage as VRM Class II.
- Manage for ROS roaded natural class.

ALTERNATIVE D - Included in Cooke's Range ACEC

FRANKLIN MOUNTAINS ACEC

GENERAL DESCRIPTION

The Franklin Mountains are located in southeastern Dona Ana County approximately 15 miles southeast of Las Cruces. The mountains are characterized by limestone outcrops that have been uplifted and bent to form a wavy layered, jagged ridge. The mountains support an extremely diverse cactus community that includes State and Federal endangered species such as Sneed's pincushion cactus.

The Franklin Mountains meet the relevance and importance criteria by having significant scenic values and endangered species plus their habitats which are more than locally significant and are vulnerable to adverse change from mining, plant theft, and vehicle use.

MANAGEMENT GOALS

Manage to protect biological and scenic values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - Included in Organ/Franklin Mountains ACEC

ALTERNATIVE C - 3,890 acres

- Retain all public land; acquire all private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Consider chemical brush control in some portions where necessary to meet desired plan community objectives.
- Manage as VRM Class I.
- Manage in accordance with Organ Mountains Coordinated Resource Management Plan.
- If designated NCA, ACEC designation would terminate and ACEC management prescriptions would be incorporated into management plan.
- Manage for ROS semi-primitive motorized recreation class.

ALTERNATIVE D - Included in Organ/Franklin Mountains ACEC

GILA LOWER BOX ACEC

GENERAL DESCRIPTION

The proposed Gila Lower Box ACEC is located in northwest Hidalgo County approximately 30 miles north of Lordsburg, New Mexico. The size of the area is 6,490 acres. The site is characterized by cliffs and steep canyon sides rising above a significant riparian area. The riparian area itself has stands of Arizona sycamore, Fremont cottonwoods, willows, and associated riparian vegetation. There are several State-listed and Federal candidate animal species which occur or have habitat within the area. The area also provides seasonal habitat for numerous species of raptors.

The Gila Lower Box meets the BLM's relevance criteria because it provides habitat for several State-listed and Federal candidate species. The Gila Lower Box is also the largest and most significant riparian area in the Resource Area. The area meets the importance criteria because it has been recognized as warranting special management and protection in order to restore and rehabilitate the degraded condition of the riparian area.

MANAGEMENT GOALS

Manage to protect riparian values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - 2,469 acres

- Manage as per existing Gila Lower Box ACEC management plan, as modified by Gila River Coordinated Resource Management Plan:
 - Fence entire river bottom to protect riparian vegetation. (Completed)
 - Exclude livestock use from the river bottom. (Completed)
 - Designate NSO for fluid mineral leasing. (Currently closed to fluid mineral leasing due to WSA status.)

- Withdraw from public land laws including mining and material sales laws. (Area effectively withdrawn because of existing withdrawals.)
- Sign main entrances.
- Limit vehicle use to designated roads and trails. (Currently limited to existing roads and trails due to WSA status.)
- Develop primitive recreation site and parking areas.
- Acquire 320 acres. (70 acres have been acquired.)
- Provide maps, signs, and brochures for public education.
- Conduct annual monitoring of vegetation, water quality, and wildlife. (Monitoring ongoing.)

ALTERNATIVE B - 6,490 acres

- Retain all public land; acquire all State trust and private lands.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Maintain exclusion of livestock by existing fencing along river bottom.
- Secure guaranteed instream flow when State law allows.
- Exclude feral animals.
- Develop primitive recreation site and parking areas (5 acres).
- Sign main entrances and provide maps and brochures.
- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Continue annual monitoring program.
- Manage for ROS primitive semi-primitive nonmotorized classes.

ALTERNATIVE C - 6,490 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.

- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Acquire legal public access.
- Once riparian vegetation is re-established, livestock grazing would be considered as a management tool to meet vegetation management objectives in the river bottom.
- The fenced portion of the river bottom would remain unallotted.
- Secure guaranteed instream flow when State law allows.
- Exclude feral animals.
- Develop primitive recreation site and parking areas (5 acres).
- Sign main entrances and provide maps and brochures.
- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Continue annual monitoring program.
- Manage for ROS primitive, semi-primitive nonmotorized, and semi-primitive motorized classes.

ALTERNATIVE D - 6,490 acres

- Retain all public land; acquire all State trust and private lands.

- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Once riparian vegetation re-established, livestock grazing would be considered as a management tool to meet vegetation management objectives in the river bottom.
- The fenced portion of the river bottom would remain unallotted.
- Secure guaranteed instream flow when State law allows.
- Exclude feral animals.
- Develop primitive recreation site and parking areas (5 acres).
- Sign main entrances and provide maps and brochures.
- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Continue annual monitoring program.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

GILA MIDDLE BOX ACEC

GENERAL DESCRIPTION

The Gila Middle Box is located in southwestern Grant County about 27 miles north of Lordsburg and 20 miles west of Silver City. It was designated as an ACEC in 1984. The middle box is a narrow, rugged canyon with steep walls. The canyon bottom supports a rich riparian community that includes extremely high species diversity including the most specious bird community in New Mexico. The canyon provides habitat for State endangered mammals and reptiles, and State and Federal endangered fish and birds. The river is the longest free-flowing river in the United States.

The Gila Middle Box meets the relevance criteria by having significant fish and wildlife resources including endangered species, and by supporting a sensitive riparian ecosystem. It meets the importance criteria by having a distinctive and regionally significant biotic assemblage which is vulnerable to adverse change. Any alteration of the river or riparian community could have an adverse impact on the endangered species in the area.

MANAGEMENT GOALS

Manage to protect riparian values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - 840 acres

- Manage as per existing Gila Middle Box ACEC management plan:
 - Exclude authorizations for ROWs.
 - Designate NSO for fluid mineral leasing. (Completed)
 - Withdraw from public land laws including mining and material sales laws. (Area effectively withdrawn because of existing withdrawals.)

ALTERNATIVE B - 840 acres

- Retain all public land.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Secure guaranteed instream flow when State law allows.
- Manage as VRM Class II.
- Incorporate provisions of existing ACEC management plan.
- Manage for semi-primitive nonmotorized class.

ALTERNATIVE C - 840 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Acquire legal public access.
- Secure guaranteed instream flow when State law allows.
- Manage as VRM Class II.
- Incorporate provisions of existing ACEC management plan.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE D - 840 acres

- Retain all public land.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Secure guaranteed instream flow when State law allows.
- Manage as VRM Class II.
- Incorporate provisions of existing ACEC management plan.
- Manage for ROS semi-primitive nonmotorized class.

GRANITE GAP ACEC

GENERAL DESCRIPTION

The proposed Granite Gap ACEC is located in west central Hidalgo County approximately 24 miles southwest of Lordsburg, New Mexico. The size of the area is 1,750 acres. Granite Gap is a low saddle in the Peloncillo Mountains. To the northwest, Granite Peak rises above the gap while the Peloncillo Mountain range continues south. The Gap itself is in an area of rocky limestone ridges which exhibit diverse vegetation communities. The area has several State-listed animal species including a small herd of desert bighorn sheep. Authorities also feel that this area has a higher cactus diversity than any other area in New Mexico.

Granite Gap meets the BLM's relevance criteria because of the occurrence of State-listed animals, its diverse cactus community, desert bighorn sheep habitat, and its scenic values. The area meets the importance criteria because it has qualities that make it fragile, unique, and vulnerable to adverse changes warranting special management and protection.

MANAGEMENT GOALS

Manage to protect biological and scenic values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 1,750 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Allow natural fires to burn under prescribed conditions.
- Exclude use of heavy equipment for fire suppression.

- Incorporate provisions of existing HMP.
- Monitor camping during javelina season.
- If resource conflicts appear to be developing, consider establishing designated sites.
- Manage as VRM Class I.
- Manage for semi-primitive motorized class.

ALTERNATIVE C - 1,750 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Allow natural fires to burn under prescribed conditions.
- Exclude use of heavy equipment for fire suppression.
- Incorporate provisions of existing HMP.
- Monitor camping during javelina season.
- If resource conflicts appear to be developing, consider establishing designated sites.
- Manage as VRM Class I.
- Manage for semi-primitive motorized class.

ALTERNATIVE D - 1,750 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Allow natural fires to burn under prescribed conditions.
- Exclude use of heavy equipment for fire suppression.
- Incorporate provisions of existing HMP.
- Monitor camping during javelina season.
- If resource conflicts appear to be developing, consider establishing designated sites.
- Manage as VRM Class I.
- Manage for ROS semi-primitive class.

GUADALUPE CANYON ACEC

GENERAL DESCRIPTION

The proposed Guadalupe Canyon ACEC is located in the southwestern corner of Hidalgo County. The size of the area is 4,170 acres. The canyon begins in the Guadalupe Mountains of southwest New Mexico, runs southwest into Arizona and continues into Mexico. The canyon bottom has a riparian zone which is characterized by stands of Arizona sycamore, Fremont cottonwood, and associated riparian vegetation. The area is well known for its high number of State-listed and State-sensitive plant and animal species, the National significance of its avifauna diversity, and the unique riparian area and associated vegetation. This area adjoins a proposed ACEC in Arizona.

Guadalupe Canyon meets the BLM's relevance criteria because it has significant and diverse wildlife and vegetation resources, special status species occurrence, and valuable riparian resources. The area meets the importance criteria because it has qualities that make it rare unique exemplary, and vulnerable to adverse changes warranting special management and attention.

MANAGEMENT GOALS

Manage to protect biological and riparian values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 4,170 acres

- Retain all public land; acquire all private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.
- Maintain existing C&MU classification for minerals until protective withdrawal established.
- Close to mineral material sales.
- Close to fluid mineral leasing.

- Investigate relocating the road out of the bottom.
- Eliminate livestock grazing in the riparian area.
- Allow natural fires to burn under prescribed conditions.
- Exclude use of heavy equipment for fire suppression.
- Manage for primitive or semi-primitive recreation opportunities.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized and semi-primitive classes.

ALTERNATIVE C - 4,170 acres

- Retain all public land; acquire all private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Investigate relocating the road out of the bottom.
- Revise the existing AMP to incorporate riparian objectives.
- Allow natural fires to burn under prescribed conditions.
- Exclude use of heavy equipment for fire suppression.
- Manage for primitive or semi-primitive recreation opportunities.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized and semi-primitive classes.

ALTERNATIVE D - 4,170 acres

- Retain all public land; acquire all private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.
- Maintain existing C&MU classification for minerals until protective withdrawal established.
- Close to mineral material sales.
- Close to fluid mineral leasing.

- Investigate relocating the road out of the bottom.
- Revise the existing AMP to incorporate riparian objectives.
- Allow natural fires to burn under prescribed conditions.
- Exclude use of heavy equipment for fire suppression.

- Manage for primitive or semi-primitive recreation opportunities.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized and semi-primitive motorized classes.

ICE CANYON ACEC

GENERAL DESCRIPTION

Ice Canyon within the Dripping Springs Natural Area is located in the Organ Mountains approximately 8 miles east of Las Cruces in east-central Dona Ana County. Ice Canyon provides habitat for the State endangered Organ Mountains chipmunk, Organ Mountains evening primrose, Organ Mountains pincushion cactus, and nodding cliff daisy. The plant species are all Federal candidates. The proposed ACEC also contains historic ruins including the Van Patten Mountain Camp, a site which is suitable for inclusion in the National Register of Historic Places. The scenic qualities of the Organ Mountains are outstanding, and Ice Canyon and the surrounding peaks offer some of the most spectacular scenery in New Mexico.

Ice Canyon meets the relevance criteria of having significant historic and scenic values, an endangered animal species, endangered plant species, habitat that is essential for maintenance of biodiversity, and dangerous cliffs. Ice Canyon meets the importance criteria because the qualities of the area are regionally or even Nationally significant, the historic and endangered species resources are irreplaceable, and they are vulnerable to adverse change from recreation uses and vandalism.

MANAGEMENT GOALS

Manage to protect biological, scenic, and cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - Included in Organ/Franklin Mountains ACEC

ALTERNATIVE C - 330 acres

- Retain all public land; acquire all State trust and private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage in accordance with the Organ Mountains Coordinated Resource Management Plan, also no dogs or pets, and hiking on designated trails only.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE D - Included in Organ/Franklin Mountains ACEC

KILBOURNE HOLE ACEC

GENERAL DESCRIPTION

Kilbourne Hole is a volcanic maar in southwestern Dona Ana County, approximately 20 miles southwest of Las Cruces. The hole is a crater that formed when a volcanic bubble burst on the surface of the earth. Kilbourne Hole has been designated as a National Natural Landmark by the BLM and the National Park Service because it is the best known example of a maar in the Chihuahuan desert region.

Kilbourne Hole meets the relevance criteria of being a rare geologic feature, and meets the importance criteria of having more than local significance because of the distinctiveness and uniqueness of a maar, especially one of this size and clarity.

MANAGEMENT GOALS

Manage to protect geological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 10,640 acres

- Retain all public land; acquire all State trust and private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Work with the County to relocate the County road away from rim edge.
- Establish safety/"no shooting" restriction within the rim.
- Interpret geological features by signing.

- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

ALTERNATIVE C - 5,480 acres

- Retain all public land; acquire all State trust and private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Establish safety/"no shooting" restriction within the rim.
- Interpret geological features by signing.
- Establish primitive facilities (parking area, tables, toilets)(2 acres).
- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

ALTERNATIVE D - 5,480 acres

- Retain all public land; acquire all State trust and private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Establish safety/"no shooting" restriction within the rim.
- Interpret geological features by signing.
- Establish primitive facilities (parking area, tables, toilets)(2 acres).
- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

LAS UVAS MOUNTAINS ACEC

GENERAL DESCRIPTION

The Uvas Mountains are located in northwestern Dona Ana County, approximately 25 miles northwest of Las Cruces. They are volcanic mountains that have eroded to form flat-topped mesas interspersed by large canyons. Vegetation on these mountains is predominantly grass with scattered junipers and mountain shrubs.

The Uvas Mountains meet the relevance and importance criterion of having significant scenic values that are vulnerable to adverse change.

MANAGEMENT GOALS

Manage to protect scenic values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 11,150 acres

- Retain all public land; acquire all State trust and private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Allow natural fires to burn within prescribed conditions.
- Exclude use of heavy equipment for fire suppression.
- Maintain primitive and semi-primitive recreational opportunities (no developed facilities).
- Manage as VRM Class I.
- Manage for semi-primitive nonmotorized and semi-primitive motorized classes.

ALTERNATIVE C - Not proposed as an ACEC.

ALTERNATIVE D - Not proposed as an ACEC.

LORDSBURG PLAYA ACEC

GENERAL DESCRIPTION

The proposed Lordsburg Playa ACEC is actually the central of three playa lakes located 10 miles west of Lordsburg in west-central Hidalgo County. The playa is a flat, dry lake bed that is devoid of vegetation except around the edges. The playa is a relict of the large Pleistocene lakes that covered many of the intermountain basins of the southwestern United States during the last glacial period. The soil is a very heavy clay that is inundated during periods of high runoff. A State sensitive saltbush occurs here. The historic Butterfield Trail crosses the southern portion of the playa and Mogollon Indian artifacts exist within the playa area. The lake provides important habitat for migrating and wintering waterfowl.

The Lordsburg Playa meets the relevance criteria of having a natural process or system including sensitive plant species such as *Atriplex griffithsii* (known only to this area and the Wilcox Playa in Arizona) and relict plant communities. It meets the importance criterion because of the exemplary quality of the playa ecosystem.

MANAGEMENT GOALS

Manage to protect biological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 4,510 acres

- Retain all public land.
- Close to vehicle use or by special permit.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Manage as VRM Class II.
- Monitor grazing impacts on *Atriplex griffithsii*.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE C - Not proposed as an ACEC.

ALTERNATIVE D - 4,510 acres

- Retain all public land.
- Close to vehicle use or by special permit.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Manage as VRM Class II.
- Monitor grazing impacts on *Atriplex griffithsii*.
- Manage for ROS semi-primitive nonmotorized class

LOS TULES ACEC

GENERAL DESCRIPTION

Los Tules is a large pithouse village situated on the western edge of Las Cruces. Los Tules got its name from the abundant cattails (tules) which once grew along the Rio Grande. Los Tules was partially excavated in 1940 by Donald Lehmer of the University of Arizona. Los Tules became the type site for defining the Jornada Branch of the Mogollon culture (A.D. 200 - A.D. 1400). Lehmer excavated several pithouses at the site and the results were published in 1948. Today the site is half on BLM-administered land and half on private land. Private subdivisions are beginning to encroach on the site (Raashaf Hills). The site covers approximately 40 acres.

The Los Tules Site meets the BLM's relevance criteria because it is a significant cultural resource. The Los Tules Site meets the BLM's ACEC importance criteria because it is a fragile, sensitive, rare, irreplaceable, endangered, threatened, and vulnerable cultural resource.

MANAGEMENT GOALS

Manage to protect cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 20 acres

- Retain all public land; acquire adjacent private land.

- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Designate NSO for fluid mineral leasing.
- Fence or cover site with sterile fill (3/4 mile of fence; 1/4 acre).
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE C - 20 acres

- Retain all public land; acquire adjacent private land.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Designate NSO for fluid mineral leasing.
- Fence or cover site with sterile fill (3/4 mile of fence; 1/4 acre).
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE D - 20 acres

- Retain all public land; acquire adjacent private land.
- Close to vehicle use.
- Designate NSO for fluid mineral leasing.
- Fence or cover site with sterile fill (3/4 mile of fence; 1/4 acre).
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

MASSACRE PEAK ACEC

GENERAL DESCRIPTION

The Massacre Peak Petroglyph Site consists of hundred of petroglyphs pecked onto sarten sandstone bedrock within a broad canyon approximately 2 miles west of Fort Cummings. These petroglyphs were first noted by Colonel Cooke and the Mormon Battalion in 1848 and are described in his journal along with 18 associated bedrock mortars. The petroglyphs are relatively intact although they were almost destroyed in the early 1980's by a trespass commercial rock quarry operation. Fortunately, the BLM stopped the operation before too many petroglyphs were blasted out of the rock. However, the quarry operation did remove most of the bedrock mortars observed by Cooke in 1846.

The petroglyphs are believed to be representative of the Mimbres culture (A.D. 1000 - A.D. 1150). The site is mentioned in the recent Fort Cummings Cultural Resource Management Plan as a potential interpretive exhibit along a proposed Butterfield Trail hiking trail.

The Massacre Peak Petroglyph Site meets the BLM's relevance criteria because it is a significant cultural resource. The site meets the BLM's ACEC importance criteria because it is a fragile, sensitive, rare, irreplaceable, endangered, threatened, and vulnerable culture resource.

MANAGEMENT GOALS

Manage to protect cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - Included in Cooke's Range ACEC

ALTERNATIVE C - 480 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Incorporate provisions of Fort Cummings Cultural Resource Management Plan.
- Interpret the petroglyphs through signs and tours.
- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

ALTERNATIVE D - Included in Cooke's Range ACEC

NORTHERN PELONCILLO MOUNTAINS ACEC

GENERAL DESCRIPTION

The proposed Northern Peloncillo Mountain ACEC is located in west central Hidalgo County approximately 20 miles west of Lordsburg, New Mexico. The size of the area is 760 acres. This area is the northern extension of the Peloncillo Mountains which occur in New Mexico. The area is comprised of narrow canyons, cliffs, and a few minor peaks. This area is considered habitat for desert bighorn sheep, a State-listed species.

The Northern Peloncillo Mountains meet the BLM's relevance criteria because it has significant wildlife values. The area meets the importance criteria because it has qualities that are sensitive and vulnerable to adverse change warranting special management and protection.

MANAGEMENT GOALS

Manage to protect biological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 760 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.

- Close to vehicle use.
- Close to fluid mineral leasing.
- Allow natural fires to burn within prescribed conditions.
- Exclude use of heavy equipment for fire suppression.
- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC Management prescriptions would be incorporated into WMP.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE C - Not proposed as an ACEC

ALTERNATIVE D - 760 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Allow natural fires to burn within prescribed conditions.
- Exclude use of heavy equipment for fire suppression.
- Manage as VRM Class II.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS semi-primitive nonmotorized class.

OLD TOWN ACEC

GENERAL DESCRIPTION

Old Town is a Mimbres village site situated on a high bluff overlooking the Mimbres River valley. The site is 15 miles northwest of Deming, New Mexico. The site is well known to the general public in the Deming area and the site has been extensively shovel pothunted for the past 100 years. It has been estimated that 1,000 whole Mimbres vessels have been stolen from the site. Little professional archaeological excavation had occurred until the summer of 1989 when the BLM sponsored an archaeological field school from Texas A&M University. The field school is now affiliated with the University of Texas at Austin. The field school determined the site to have been a two story cobble masonry pueblo with an underlying pithouse village. The main site area is approximately 5 acres in size, but the outlying associated site features cover a much larger area.

Old Town is one of several very large Classic Mimbres villages spaced fairly evenly along the main stem Mimbres River. Many smaller Mimbres sites are found between these very large compounds. It is estimated that over 90 percent of Mimbres villages have been destroyed by pothunters utilizing heavy machinery. Old Town suffers primarily from shovel pothunting although an avocational archaeologist once cross sectioned a portion of the site with a bulldozer. Old Town is mentioned as a possible driving tour site in the recent Mimbres Cultural Center national legislation. Old Town is still vulnerable to shovel and machine pothunting.

The Old Town ACEC meets the BLM's relevance criteria because it is a significant historic and cultural resource. The Old Town ACEC meets the BLM's ACEC importance criteria because it is a fragile, sensitive, rare, irreplaceable, endangered, threatened, and vulnerable cultural resource.

MANAGEMENT GOALS

Manage to protect cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 320 acres

- Retain all public land.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Cooperate with National Park Service (through Mimbres Culture Center legislation) to manage and interpret the site.
- Enlarge existing fenced enclosure to include all features and living areas (1 mile of fence).
- Continue research (extract information from site and document status and location of excavated materials).
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE C - 320 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Cooperate with National Park Service (through Mimbres Culture Center legislation) to manage and interpret the site.
- Enlarge existing enclosure to include all features and living areas (1 mile of fence).
- Continue research (extract information from site and document status and location of excavated materials).
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE D - 320 acres

- Retain all public land.

- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Cooperate with National Park Service (through Mimbres Culture Center legislation) to manage and interpret the site.
- Enlarge existing enclosure to include all features and living areas (1 mile of fence).
- Continue research (extract information from site and document status and location of excavated materials).
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ORGAN MOUNTAINS ACEC

GENERAL DESCRIPTION

The 8,947-acre Organ Mountains Scenic ACEC, located 8 miles east of Las Cruces in east-central Dona Ana County, was designated in 1984. The mountains are comprised of numerous spires of quartz monzonite in the northern portion with a limestone band along the west and south sides of the monzonite. The southern portion of the ACEC contains some rhyolitic extrusions and volcanic tuffs. The Organs provide possibly the most fantastic scenery in southern New Mexico. The ACEC also supports State endangered species including the Organ Mountains chipmunk, nodding cliff daisy, Organ Mountains evening primrose, and Organ Mountains pincushion cactus. These species represent a relict ecosystem that has evolved in the Organs due to the isolated nature of the mountain range.

The Organ Mountains meet all four of the relevance criteria. They contain significant scenic values; habitat for endangered plants and animals, sensitive species, and habitat that is essential for maintaining biodiversity; a natural system supporting relict terrestrial and riparian communities, and natural hazards including dangerous cliffs and canyons susceptible to flash floods. The Organs meet the importance criteria by having Nationally significant scenic and biotic qualities that are vulnerable to adverse change and warrant protection in order to satisfy National priority concerns. The quality of resources in the Organs warrant highlighting in order to satisfy both public and management concerns about public welfare, and the numerous cliffs in the Organs pose significant threats to human life and safety.

MANAGEMENT GOALS

Manage to protect scenic resource.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - 8,840 acres

Manage as per existing Organ Mountains ACEC management plan, as modified by Organ Mountains Coordinated Resource Management plan:

- Close to plant collection and sale.
- Limit vehicle use to existing roads and trails.
- Manage as VRM Class I.
- Remove Stevenson-Bennett mine gravel piles and revegetate.
- Continue existing C&MU classification for 2,759 acres.
- Exclude new ROWs and easements.

ALTERNATIVE B - Included in Organ/Franklin Mountains ACEC

ALTERNATIVE C - 8,840 acres

- Retain all public land; acquire all State trust and private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Manage as Class II for air quality.
- Manage as VRM Class I.
- Manage in accordance with Organ Mountains Coordinated Resource Management Plan.
- If designated as wilderness or National Conservation Area, ACEC designation would terminate and ACEC management prescriptions would be incorporated into management plan.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

ALTERNATIVE D - Included in Organ/Franklin Mountains ACEC

ORGAN/FRANKLIN MOUNTAINS ACEC

GENERAL DESCRIPTION

The Organ and Franklin Mountains have been proposed for designation as a National Conservation Area (NCA). These mountains run north and south through southeastern Dona Ana County. The Organs are characterized by jagged gray spires of quartz monzonite in the northern portion of the range, and massive blocks of red rhyolite interspersed with volcanic tuffs in the southern portion. Springs occur in major canyon bottoms and support valuable riparian ecosystems including rare endemic plants. The proposed NCA also includes Bishop's Cap and the northern Franklin Mountains, which are composed of diverse limestones. Each limestone type supports a unique cactus community, and several cactus communities contain Federal or State endangered species. The two mountain ranges comprise some of the most spectacular scenery in southern New Mexico, with extensive viewsheds containing both interstate highways and large metropolitan populations.

The proposed ACEC meets the relevance criteria because of the significant scenic values, endangered wildlife species including the Organ Mountain chipmunk and the desert bighorn sheep, numerous endangered plant species including the Organ Mountain evening primrose and Sneed's pincushion, and natural hazards including cliffs. The proposed ACEC meets the importance criteria because of the national significance of the resources and the fragility and sensitivity of these resources and their vulnerability to adverse change, particularly from mining, recreation uses, and illegal plant collecting.

MANAGEMENT GOALS

Manage to protect biological, scenic, riparian, special status species, and cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 56,480 acres

- Retain all public land; acquire all State trust and private lands.

- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.
- Maintain existing C&MU classification for minerals until protective withdrawal established.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Eliminate livestock grazing.
- Manage as Class II for air quality.
- Manage mountainous portions (generally above 5,000 feet) as VRM Class I; manage other portions as VRM Class III or IV.
- Manage in accordance with Organ Mountains Coordinated Resource Management Plan (except for livestock grazing and chemical brush control).
- If designated wilderness or NCA, ACEC designation would terminate and ACEC management prescriptions would be incorporated into management plan.
- Manage for ROS primitive, semi-primitive nonmotorized, semi-primitive, and roaded natural classes.

ALTERNATIVE C - Not proposed as an ACEC

ALTERNATIVE D - 56,480 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.
- Maintain existing C&MU classification for minerals until protective withdrawal established.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Manage as Class II for air quality.
- Manage mountainous portions (generally above 5,000 feet) as VRM Class I; manage other portions as VRM Class III or IV.
- Manage in accordance with Organ Mountains Coordinated Resource Management Plan.
- If designated wilderness or NCA, ACEC designation would terminate and ACEC

- Management prescriptions would be incorporated into management plan.

- Manage for ROS primitive, semi-primitive nonmotorized, semi-primitive, and roaded natural classes.

PALEOZOIC TRACKWAYS ACEC

GENERAL DESCRIPTION

The Paleozoic Trackways Site is located on public land in the Robledo Mountains approximately 5 miles northwest of Las Cruces, New Mexico. In 1988, Mr. Jerry MacDonald applied to BLM for a Paleontological Excavation Permit to excavate fossil trackways on public land in the Robledo Mountains. On April 21, 1988, a BLM paleontological excavation permit was issued to Mr. Jerry MacDonald and the Smithsonian Institution to excavate 280-million year old fossil trackways in the Abo formation. Mr. MacDonald is the Project Director and Dr. Nicholas Hooten of the Smithsonian Institution is the Principal Investigator. In addition to the Smithsonian Institution, the project is also sponsored by the Carnegie Museum of Natural History in Pittsburgh and the Los Angeles County Museum of Natural History.

Paleontologists at these institutions feel that the Robledo trackways are some of the most outstanding trackway localities ever discovered for vertebrate and invertebrate animals in terms of quality, quantity, and variety. These fossils have the potential to revise current thinking about the abundance and diversity of life in the Early Permian period 280-million years ago. The fossil beds are in cyclical sandstone, siltstone, shale, and mudstone. The vertebrate fossils range from those made by small lizard-like reptiles to larger prints made by 5-foot-long sprawling quadrupeds.

The Paleozoic Trackways meets the BLM's ACEC relevance criteria because it has significant paleontological values. The Paleozoic Trackways meets the BLM's ACEC importance criteria because the site has regional and international scientific values. The site is fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, and vulnerable to adjacent quarry activities for building stone.

MANAGEMENT GOALS

Manage to protect, research, and interpret paleontological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 720 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Manage in accordance with recommendations provided in Trackways study legislation.
- Interpret in accordance with study legislation.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE C - 720 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Acquire legal public access.
- Manage in accordance with recommendations provided in Trackways Study legislation.
- Interpret in accordance with study legislation.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE D - 720 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Withdraw from locatable mineral entry.

- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Manage in accordance with recommendations provided in Trackways Study legislation.

- Interpret in accordance with study legislation.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

PONY HILLS ACEC

GENERAL DESCRIPTION

This site consists of numerous petroglyphs pecked onto sandstone outcrops on top of the gently rolling Pony Hills. The site is situated approximately 10 miles north of Deming, New Mexico. The petroglyphs are representative of both the Jornada Mogollon and the Mimbres cultures. The petroglyphs include zoomorphic, anthropomorphic, and geometric figures. The site has been the victim of some vandalism and natural erosion.

This site is a favored recreation area for people in the Deming, New Mexico area. The site is well known and is subject to frequent vandalism. The petroglyph panels are unique in that they are more numerous and diverse here than at most other southern New Mexico rock art sites. The site is best known for a large "Kokopelli" (humpbacked flute player) figure. The site has both local and regional archaeological significance and high public education potential. The site is vulnerable and threatened with destruction by vandals who remove the panels with chisels.

The Pony Hills ACEC meets the BLM's relevance criteria because it is a significant historic and cultural resource. The Pony Hills ACEC meets the BLM's ACEC importance criteria because it is a fragile, sensitive, rare, irreplaceable,

endangered, threatened, and vulnerable cultural resource.

MANAGEMENT GOALS

Manage to protect and interpret cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - Included in Cooke's Range ACEC

ALTERNATIVE C - 480 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Interpret the petroglyphs through signing and tours.
- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

ALTERNATIVE D - Included in Cooke's Range ACEC.

RINCON ACEC

GENERAL DESCRIPTION

The Rincon Petroglyph Site consists of numerous petroglyphs pecked onto large boulders on the south side of an unnamed mountain 1 mile north of Rincon, New Mexico. The petroglyphs are scattered over an extremely large area approximately 1.0 mile x 0.75 mile in size. The petroglyphs are occasionally clustered in steep sided canyon areas and on the top of the mountain. Some of the petroglyphs have been damaged by the construction of communication sites on top of the mountain. Most of this damage has occurred on the State trust land portion of the site. Mining prospects and treasure hunting have damaged other portions of the rock art. The petroglyphs are believed to be representative of the Jornada Mogollon culture (A.D. 200 - A.D. 1400). Because of the proximity of the site to I-25 and the communities of Hatch and Rincon it is believed to have interpretive potential.

The Rincon Petroglyph Site meets the BLM's relevance criteria because it is a significant cultural resource. The site meets the BLM's ACEC importance criteria because it is a fragile, sensitive, rare, irreplaceable, endangered, threatened, and vulnerable cultural resource.

MANAGEMENT GOALS

Manage to protect cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 840 acres

- Retain all public land; acquire adjacent State trust land in south half of Section 32.
- Limit vehicle use to designated roads and trails.

- Exclude new ROW authorizations outside existing sites.
- Withdraw from locatable mineral entry.
- Close to mineral material sales outside existing rock quarry.
- Close to fluid mineral leasing.
- Evaluate potential to interpret the petroglyphs.
- Manage as VRM Class II.
- Manage for semi-primitive nonmotorized class.

ALTERNATIVE C - 840 acres

- Retain all public land; acquire all State trust land in south half of Section 32.
- Limit vehicle use to designated roads and trails.
- Exclude new ROW authorizations outside existing sites.
- Close to mineral material sales outside existing rock quarry.
- Designate NSO within 100 feet of petroglyph site.
- Evaluate potential to interpret the petroglyphs.
- Manage as VRM Class II.
- Manage for semi-primitive nonmotorized class.

ALTERNATIVE D - 840 acres

- Retain all public land; acquire all State trust land in south half of Section 32.
- Limit vehicle use to designated roads and trails.
- Exclude new ROW authorizations outside existing sites.
- Close to mineral material sales outside existing rock quarry.
- Designate NSO within 100 feet of petroglyph site.
- Evaluate potential to interpret the petroglyphs.
- Manage as VRM Class II.
- Manage for semi-primitive nonmotorized class.

ROBLEDO MOUNTAINS ACEC

GENERAL DESCRIPTION

The Robledo Mountains are located 8 miles northwest of Las Cruces in central Dona Ana County. The Robledos are composed of a massive block of Paleozoic sedimentary rocks and Cenozoic igneous rock. The Robledos also provide a spectacular scenic quality to the inhabitants of the northern Mesilla Valley. The Robledos support a high diversity of cacti including the State endangered button cactus and Scheer's pincushion cactus, and provide important habitat for uncommon reptiles. The Madrean alligator lizard occurs in a relict population here that represents the easternmost limit of the species' range. Other reptiles reach the northern or western limits of their range here, such as the Trans-Pecos rat snake. Recent genetic research has shown that peripheral populations of animals along the edge of a species' range often contain very different genotypes from most of the populations of that species, making those peripheral populations very important for allowing adaptability to environmental change that is crucial for species survival. Finally, some of the earliest known prehistoric habitation sites in southern New Mexico are in the Robledo Mountains.

The Robledos meet the relevance criteria of having significant paleontological, cultural, and scenic values and endangered plant species. They meet the importance criteria of more than locally significant resources in terms of the paleontological resources which have international significance, scenic quality which is enjoyed by hundreds of thousands of travelers on I-25 annually, and for preservation of biodiversity which is distinctive.

MANAGEMENT GOALS

Manage to protect biological and scenic values and to protect, research, and interpret paleontological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 13,790 acres

- Retain all public land; acquire all State trust lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Maintain current livestock grazing practices.
- Allow natural fires to burn under prescribed conditions.
- Manage for primitive and semi-primitive recreation opportunities (no developed facilities).
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

ALTERNATIVE C - Not proposed as an ACEC

ALTERNATIVE D - 13,790 acres

- Retain all public land; acquire all State trust lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Acquire legal public access.
- Maintain current livestock grazing practices.
- Allow natural fires to burn under prescribed conditions.
- Manage for primitive and semi-primitive recreation opportunities (no developed facilities).
- Manage as VRM Class I.
- If designated wilderness, ACEC designation would terminate and ACEC management prescriptions would be incorporated into WMP.
- Manage for ROS primitive and semi-primitive nonmotorized classes.

SAN DIEGO MOUNTAIN ACEC

GENERAL DESCRIPTION

This site consists of several hundred petroglyphs pecked into brown igneous boulders in a large canyon on the north side of San Diego Mountain. San Diego Mountain is located approximately 7 miles north of Radium Springs. These petroglyphs are believed to be representative of the Jornada Mogollon culture (A.D. 200 to A.D. 1400). The petroglyphs element forms are animals, humans, fish, and abstract motifs. The rock art and the surrounding canyon are relatively undisturbed. The site can only be accessed by walking, as the canyon bottom is narrow, boulder strewn, and rugged. San Diego Mountain Petroglyph Site is the least disturbed of all rock art sites within the Mimbres Resource Area. Recently, an avocational archeo-astronomer in association with Human Systems Research documented an archeo-astronomical feature at the site. This feature needs further documentation. It is believed that several associated habitation sites are located near the petroglyphs but an intensive archaeological survey has never been conducted.

The San Diego Mountain Petroglyph Site meets the BLM's relevance criteria because it is a significant cultural resource. The site meets the BLM's ACEC importance criteria because it is a fragile, sensitive, rare, irreplaceable, endangered, threatened, and vulnerable cultural resource.

MANAGEMENT GOALS

Manage to protect and research cultural values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 640 acres

- Retain all public land; acquire adjacent private land.

- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Manage for research rather than interpretive value.
- Encourage or conduct rock art research.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE C - 640 acres

- Retain all public land; acquire adjacent private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Manage for research rather than interpretive value.
- Encourage or conduct rock art research.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE D - 640 acres

- Retain all public land; acquire adjacent private land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Manage for research rather than interpretive value.
- Encourage or conduct rock art research.
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

TRES HERMANAS ACEC

GENERAL DESCRIPTION

The proposed Tres Hermanas ACEC is located in south central Luna County approximately 30 miles south of Deming, New Mexico and 5 miles north of Columbus, New Mexico. The size of the area is 960 acres. This is an area of mostly steep-sided peaks and ridges composed of granite and limestone. Several State-listed and State sensitive plants occur in the area.

The Tres Hermanas meets the BLM's relevance criteria because of the occurrence of the sensitive plant species. The area meets the importance criteria because it has qualities which are sensitive and vulnerable to adverse change which warrant recognition to satisfy public or management concerns.

MANAGEMENT GOALS

Manage to protect biological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 960 acres

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Revise existing AMP for livestock grazing.
- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

ALTERNATIVE C - Not proposed as an ACEC

ALTERNATIVE D - Not proposed as an ACEC

UVAS VALLEY ACEC

GENERAL DESCRIPTION

The proposed Uvas Valley ACEC is located in northeast Luna County approximately 8 miles southeast of Nutt, New Mexico. The size of the area is 2,210 acres. The area is mostly flat interspersed with swales and rolling hills on the west side of the area. The area has almost pure stands of black grama on the western portion of the area.

The Uvas Valley meets the BLM's relevance criteria because this may well be the best remaining example of black grama grassland other than an existing ACEC on McGregor Range. The area meets the importance criteria because it has more than locally significant qualities and is rare and sensitive to adverse changes warranting special management and protection.

MANAGEMENT GOALS

Manage to protect biological values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 2,210 acres

- Retain all public land; acquire all State trust and private lands.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Revise existing AMP for livestock grazing.
- Exclude livestock grazing for at least two growing seasons following a wildfire.

- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE C - 2,210 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Revise existing AMP for livestock grazing.
- Exclude livestock grazing for at least two growing seasons following a wildfire.
- Manage as VRM Class II.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE D - 2,210 acres

- Retain all public land; acquire all State trust and private lands.
- Close to vehicle use.
- Exclude authorizations for ROWs.
- Close to mineral material sales.
- Close to fluid mineral leasing.
- Revise existing AMP for livestock grazing.
- Exclude livestock grazing for at least two growing seasons following a wildfire.
- Manage as VRM Class II.
- Consider chemical brush control in some portions where necessary to meet desired plant community objectives.
- Manage for ROS semi-primitive nonmotorized class.

APPENDIX H-2

SPECIAL MANAGEMENT AREAS--TRAILS

This appendix contains general descriptions of two Special Management Areas (SMAs) identified in this Resource Management Plan (RMP).

The narratives for each SMA include a general description, management goals, and management prescriptions.

BUTTERFIELD TRAIL

GENERAL DESCRIPTION

In 1858, John Butterfield was awarded a mail contract to establish the Butterfield Overland Mail Company. The Butterfield stage carried mail and passengers from St. Louis, Missouri to San Francisco, California. In New Mexico, the "Butterfield Trail" ran east/west across southern New Mexico from El Paso, Texas to the Doubtful Canyon station north of Steins, New Mexico and then into Arizona. Stage stations of adobe and rock masonry were built at watering points along the trail. The U.S. Government ordered closure of the line in March of 1861 in response to Texas Secession from the Union. After 1861, the Butterfield Trail was utilized as the southern emigrant trail to California.

The Butterfield Trail and associated stage station localities are considered to have significant regional, historical, and archaeological significance. The remains of the trail and stations are fragile and nonrenewable cultural resources which are deserving of preservation, research, and interpretation to the general public.

MANAGEMENT GOALS

Manage to protect and interpret historical values.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an SMA

ALTERNATIVE B - 15,690 acres

- Retain all public land; acquire all State trust and private lands (with emphasis on stage stations).
- Limit vehicle use to designated roads and trails.

- Restrict authorizations for ROWs.
- Close to mineral material sales.
- Designate NSO within ¼ mile of trail.
- Manage in accordance with existing Cultural Resource Management Plan.
- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

ALTERNATIVE C - 15,690 acres

- Retain all public land; acquire all State trust and private lands (with emphasis on stage stations).
- Limit vehicle use to designated roads and trails.
- Restrict authorizations for ROWs.
- Close to mineral materials sales.
- Designate NSO within ¼ mile of trail.
- Manage in accordance with existing Cultural Resource Management Plan.
- Interpret with emphasis on facilities development.
- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

ALTERNATIVE D - 15,690 acres

- Retain all public land; acquire all State trust and private lands (with emphasis on stage stations).
- Limit vehicle use to designated roads and trails.
- Restrict authorizations for ROWs.
- Close to mineral material sales.
- Designate NSO within ¼ mile of trail.
- Manage in accordance with existing Cultural Resource Management Plan.
- Interpret with emphasis on passive interpretation such as signing.
- Manage as VRM Class II.
- Manage for ROS semi-primitive motorized class.

CONTINENTAL DIVIDE NATIONAL SCENIC TRAIL

GENERAL DESCRIPTION

The Continental Divide National Scenic Trail was established as part of the National Scenic Trail System by Public Law 95-625, the National Parks and Recreation Act of 1978, which amended the National Trails Act of 1968. The Continental Divide National Scenic Trail runs the entire length of the Continental Divide within the United States. The entire trail route has been designated except for the southernmost section of the trail across the Mimbres Resource Area from the Mexican border to the Gila National Forest.

The Continental Divide National Scenic Trail contains significant scenic values along the length of the trail regardless of which route is selected. It has National significance and could soon have International significance if Mexico follows through with plans to continue the trail south of the border.

MANAGEMENT GOALS

Manage to maintain scenic and primitive recreation values in accordance with the enabling legislation.

PLANNED ACTIONS

ALTERNATIVE A (No Action Alternative) - Not an ACEC

ALTERNATIVE B - 75,270 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails that cross the Continental Divide National Scenic Trail.
- Restrict authorizations for ROWs.
- Close to mineral material sales.
- Designate NSO within 1 mile of the trail.

- Designate the trail (Forest Service lead).
- Mark and/or construct the route.
- Develop four trailheads/parking areas (1 acre).
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE C - 21,800 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails that cross the Continental Divide National Scenic Trail.
- Restrict authorizations for ROWs.
- Close to mineral material sales.
- Designate NSO within ¼ mile of the trail.
- Designate the trail (Forest Service lead).
- Mark and/or construct the route.
- Develop four trailheads/parking areas (1 acre).
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

ALTERNATIVE D - 48,450 acres

- Retain all public land; acquire all State trust and private lands.
- Limit vehicle use to designated roads and trails that cross the Continental Divide National Scenic Trail.
- Restrict authorizations for ROWs.
- Close to mineral material sales.
- Designate NSO within ¼ mile of the trail.
- Designate the trail (Forest Service lead).
- Mark and/or construct the route.
- Develop four trailheads/parking areas (1 acre).
- Manage as VRM Class II.
- Manage for ROS semi-primitive nonmotorized class.

APPENDIX I

APPENDIX I-1

WILDERNESS INVENTORY REPORT

PENA BLANCA

INTRODUCTION

The Bureau of Land Management (BLM) exchanged lands to the State of New Mexico for lands in the Organ Mountains in 1986 and 1988. The land acquired by the BLM plus adjacent public land had not all been included in the initial inventory for wilderness suitability that was conducted in the Las Cruces District during 1979. Sections 201 and 202 of the Federal Land Policy and Management Act (FLPMA) provide for ongoing inventories of public land resources and identification of significant areas through the Resource Management Planning (RMP) process.

Acquisition of State trust land in the Organ Mountains has created a block of 4,441 acres of public land in the vicinity of Pena Blanca, a prominent geologic feature near the south end of the Organ Mountains. This report evaluates the wilderness study potential of the area.

SIZE

The Pena Blanca inventory unit contains 4,441 acres of public land. The area meets the size requirements of the Wilderness Act of 1964 by having "...at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition." Although the area is less than 5,000 acres, it is large enough to be effectively preserved in a natural condition. Furthermore, 1,080 acres of adjacent private land that has been identified for acquisition in the Southern Rio Grande Plan Amendment and the Organ Mountains Coordinated Resource Management Plan would add sufficient acreage to bring the area to 5,521 acres. Acquisition efforts for this private land are ongoing. The inventory unit is bounded on the east by the Fort Bliss Military Reservation, on the south and west by a road, and on the north end and on the northwest and southwest corners by private land.

NATURALNESS

Human imprints are substantially unnoticeable throughout the inventory unit, with the imprints consisting of livestock developments such as fences, dirt tanks, and a rock dam. Vehicle ways lead to most of the dirt tanks and rock dams. A summary of the imprints of man's work in the inventory area is shown in Table I-1.

The interior fences are old, barbed wire and wood post fences that are not visible except from nearby. These fences are non-functional in their current condition. The boundary fence is built with steel posts and barbed wire, and is also not visible except from nearby.

The dirt tanks are all nestled in low spots in the drainages and so are not easily discernable. All are old and overgrown with native vegetation, and none appear to be functional for long-term storage of runoff. Achenback Tank is located in the upper part of Achenback Canyon and only visible from a 40-acre area of the canyon and adjacent hills. The dam is breached and the pond is silted in. It would require reconstruction with hand tools or with outdated tools and draft horses as there is no access for motor vehicles or heavy equipment into the upper canyon. The remaining dirt tanks are all small, with the two in Section 25 being less than 1/4 acre each, and the tank in Section 36 being less than 1/2 acre. The small tanks in Section 25 are not on a main drainage channel, and have only about a 40-acre watershed slope above them. They probably hold a small amount of water for a few weeks during the rainy season. The tank in Section 36 is in need of maintenance as the dike is breaching and the pit is silting in. The rock tank used to feed a concrete trough through a steel pipe, but the tank is completely silted in and the pipe is gone.

Approximately 1.1 miles of the vehicle ways provide vehicular access to the dirt tanks, while

the remaining 1.5 miles provide a means for recreational users to get closer to the mountains than the road allows.

The entire inventory unit appears to have been affected primarily by the forces of nature. The few developments are not substantially noticeable in the area as a whole.

OPPORTUNITIES FOR SOLITUDE

The entire inventory unit is dissected by a series of small, narrow, rocky canyons interspersed by high, steep, rocky ridges. Woody vegetation in the canyon bottoms and rock outcrops on the hillsides compliment the topographic screening of the canyons and ridges, creating a multitude of possibilities for isolating individuals and groups from one another. Visitation to the area is slight, and despite the proximity of major population centers, the area seems very remote. The topography and location of the area allow it to provide outstanding opportunities for solitude.

OPPORTUNITIES FOR PRIMITIVE AND UNCONFINED RECREATION

The inventory unit provides opportunities for primitive and unconfined types of recreation including hiking, camping, backpacking, hunting, sightseeing, photography, and wildlife observation. The area provides some of the best quail and rabbit hunting in Dona Ana County, and when deer-entry hunts are held by the New Mexico Department of Game and Fish, some of the biggest mule deer in southern New Mexico are taken from this area. The diversity and quality of these primitive and unconfined types of recreation are outstanding.

SUPPLEMENTAL VALUES

The inventory unit contains both ecological and cultural features of scientific, educational, scenic, and historic value. Many of the canyons contain seasonal springs, some of which provide water nearly yearlong. These springs create habitat for plants and animals that is extremely important in a desert environment. Several plants listed as endangered by the State of New Mexico occur in the area, some of which are under review for

Federal listing as threatened or endangered species.

Archaeological sites in the inventory unit include midden rings and the famous Pena Blanca rockshelters. The Pena Blanca rock shelters were professionally excavated by New Mexico State University in the 1980's and have provided the earliest known cultivated corn in the United States, a primitive variety with eight rows of kernels. Other significant information has been gathered from this site, but other sites in the inventory unit have not been inventoried, recorded, or excavated.

The scenic values of this portion of the Organ Mountains are also outstanding. While the red rhyolitic rocks do not equal the quartz monzonite spires of the Organ Needles, the scenery is spectacular. The inventory unit contains canyons of angular blocky rock outcrops arranged in pyramidal patterns, with other canyons containing ribbons of green oak trees between red rhyolite cliffs, or bands of mountain mahogany nestled deep in vertical crevices between white ridges of volcanic tuff. During the summer growing season, the hills are washed in a bright green hue from the thick carpet of grasses.

POSSIBILITY OF RECLAIMING HUMAN IMPACTS

The vehicle ways could all be revegetated through successful vehicle closure. The dirt tanks are currently not functional, and unless they are rebuilt, will not require vehicular access by the grazing permittee. They are currently revegetated and will continue to assume a more natural appearance over time.

CONCLUSION

The Pena Blanca inventory unit is of sufficient size to allow its preservation in a natural condition. A 4,441-acre block of public land appears to be natural, with approximately 1,080 acres of adjacent private land also appearing to be natural. The private land have been identified for acquisition through the Southern Rio Grande Plan Amendment and the Organ Mountains Coordinated Resource Management Plan. Acquisition of this private land would result in a 5,521-acre unit. There are no private or State trust inholdings. The area offers outstanding

opportunities for primitive and unconfined types of recreation and also has supplemental ecological, cultural, and scenic values. The Pena Blanca

inventory unit will be studied in the Mimbres Resource Area RMP to determine suitability for designation as wilderness.

TABLE I-1
HUMAN IMPRINTS IN THE PENA BLANCA INVENTORY UNIT

LEGAL DESCRIPTION	IMPRINTS
T. 22 S., R. 3 E., Sections 13 and 24	.5 mile interior fences
Section 25, NE¼NW¼NE¼	Achenback tank (dirt)
Section 25, NW¼NE¼SW¼	Rock tank
Section 25, SE¼SW¼NW¼	2 small dirt tanks
Sections 25 and 26	1.4 miles vehicle ways
Section 36, SW¼NW¼NW¼	Dirt tank
Section 36	.1 mile vehicle way
T. 23 S., R. 3 E., Sections 1 and 2	2 miles boundary fence
	.4 mile vehicle way
Section 11	.2 mile vehicle way
Section 13	.05 mile vehicle way
Section 14	.5 mile vehicle way

APPENDIX I-2

WILDERNESS INVENTORY REPORT

ORGAN NEEDLES

INTRODUCTION

The Bureau of Land Management (BLM) exchanged lands to the State of New Mexico for lands in the Organ Mountains in 1986 and 1988. An additional exchange with The Nature Conservancy (TNC) in 1988 added land to the contiguous public land in the Organ Mountains. Additional acreage was acquired in an exchange with New Mexico State University in 1991. The land acquired by the BLM plus adjacent public land had not all been included in the initial inventory for wilderness suitability that was conducted in the Las Cruces District during 1979. Sections 201 and 202 of the Federal Land Policy and Management Act (FLPMA) provide for ongoing inventories of public land resources and identification of significant areas through the Resource Management Plan (RMP) process.

Acquisition of State trust and private lands in the Organ Mountains has created a block of 7,604 acres of public land in the vicinity of the Organ Needles in the central portion of the Organ Mountains. This report evaluates the wilderness values of the area and determines whether the area should be designated as a wilderness study area (WSA).

SIZE

The Organ Needles inventory unit contains 7,604 acres of public land. The area meets the size requirements of the Wilderness Act of 1964 by having "...at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition." The inventory unit is bounded on the east by the Fort Bliss Military Reservation and the White Sands Missile Range, on the south by Fort Bliss and private land, on the west by roads, and on the north end by private land and the 7,283-acre Organ Mountains WSA.

NATURALNESS

Human imprints are substantially unnoticeable

throughout the inventory unit, with the imprints consisting of livestock developments such as fences and developed springs. A summary of the imprints of man's work in the inventory area is shown in Table I-2.

The trails listed in Table I-2 include a portion of the Baylor Pass National Recreation Trail, most of the Pine Tree National Recreation Trail, and the Crawford Trail. These trails do not significantly detract from the naturalness of the area and would be in conformance with wilderness management guidelines. The road/trail is the Dripping Springs Trail which is maintained as a service road.

The fences are constructed of barbed wire and wood posts that are not visible except from nearby. One of the fences is currently in need of repair and is nonfunctional in its current condition.

The developed spring and the rock dam are both nestled in small, steep canyons that effectively screen them from view except for the immediate vicinities. Riparian vegetation further hides them from view.

The entire inventory unit appears to have been affected primarily by the forces of nature. The few developments are not substantially noticeable in the area as a whole.

OPPORTUNITIES FOR SOLITUDE

The inventory unit contains the rugged, scenic, high spires of the mountains and is dissected by a series of small, narrow, rocky canyons interspersed by high, steep, rocky ridges. Woody vegetation in the canyon bottoms and rock outcrops on the hillsides compliment the topographic screening of the peaks, canyons, and ridges creating a multitude of possibilities for isolating individuals and groups from one another. Visitation to the area is heavy, particularly in the spring and fall, but is concentrated on the

developed trails and despite the proximity of major population centers, users in the area feel very isolated. The topography and location of the area allow it to provide outstanding opportunities for solitude.

OPPORTUNITIES FOR PRIMITIVE AND UNCONFINED RECREATION

The inventory unit provides opportunities for primitive and unconfined types of recreation including hiking, rock climbing, camping, backpacking, hunting, sightseeing, photography, and wildlife observation. The Organ Needles are world renowned for their technical rock climbing opportunities, which have hundreds of mapped routes to the tops. Sugarloaf Peak is also well known by climbers. The quartz monzonite of the Needles and the Sugarloaf area is an extremely stable rock that provides excellent support desired for anchoring technical equipment. The area provides some of the best quail and rabbit hunting in Dona Ana County, and when deer-entry hunts are held by the New Mexico Department of Game and Fish, some of the biggest mule deer in southern New Mexico are taken from this area. The diversity and quality of these primitive and unconfined types of recreation are outstanding. Several plants and animals occur in the area that are found nowhere else, and are easy to observe and photograph.

SUPPLEMENTAL VALUES

The inventory unit contains ecological and cultural features of scientific, educational, scenic, and historic value. Many of the canyons contain seasonal springs, some of which provide water nearly yearlong. These springs create habitat for plants and animals that is extremely important in a desert environment. Several plants listed as endangered by the State of New Mexico occur in the area, some of which are under review for Federal listing as threatened or endangered species. The State-listed Organ Mountains chipmunk occurs through most of the area.

Archeological sites in the inventory unit include the famous La Cueva rockshelter and the historic

Modoc mine millsite and Van Patten Mountain Camp. La Cueva rockshelter was professionally excavated by the University of Texas at El Paso in the 1970's and has provided a significant number of artifacts and data on prehistoric cultures that have inhabited the cave for over 7,000 years. Other sites in the inventory unit have not been inventoried recorded or excavated.

The scenic values of this portion of the Organ Mountains are also outstanding. The quartz monzonite spires of the Organ Needles provide the most spectacular scenery in southern New Mexico, a view that the 60,000 inhabitants of Las Cruces relish daily, and local merchants constantly capitalize on in advertising. A 9,000-acre portion of the Organs including much of this unit has been designated as a Scenic Area of Critical Environmental Concern. The inventory unit contains massive spires of almost barren rock cleft with narrow chasms containing ribbons of green oak trees, with huge boulders along the flanks and alluvial fans. During the summer growing season, the hills are washed in a bright green hue from the thick carpet of grasses.

POSSIBILITY OF RECLAIMING HUMAN IMPACTS

There are no human impacts in the unit that would need reclamation to enable management as wilderness, and in fact it would violate the Antiquities Act and Archeological Resources Protection Act to disturb most of the human imprints in the area.

CONCLUSION

The Organ Needles inventory unit is of sufficient size to allow its preservation in a natural condition. A 7,604-acre block of public land was inventoried, of which appears to be natural. There are no private or State trust inholdings, although a patented mining claim and the access road to it have been excluded from the unit. The area offers outstanding opportunities for primitive and unconfined types of recreation and also has supplemental ecological, cultural, and scenic values. The Organ Needles inventory unit will be studied in the Mimbres Resource Area RMP to determine suitability for designation as wilderness.

TABLE I-2
HUMAN IMPRINTS IN THE
ORGAN NEEDLES INVENTORY UNIT

LEGAL DESCRIPTION	IMPRINTS
T. 22 S., R.3 E., Section 36, SE¼SE¼NW¼	Developed Spring
T. 22 S., R.4 E., Section 19	1.5 miles hiking trail
Section 29	1 mile hiking trail
Section 30	.5 mile hiking trail
Section 31	.5 mile hiking trail
Section 32	1 mile hiking trail
T. 23 S., R.3 E., Section 1, NE¼SW¼NE¼	Historic homestead
Section 1, SW¼SW¼NE¼	Historic mine millsite
Section 1	1.5 miles trail
Section 1	.5 mile fence
Section 2	1 mile vehicle way
Section 12, NE¼NE¼	.25 mile trail
Section 12, NE¼NE¼NE¼	Crawford homestead
Section 12	.75 mile road/trail
T. 23 S., R.4 E., Section 7, SE¼SE¼NW¼	Van Patten Mountain Camp
Section 7, NW¼NE¼SW¼	Boyd Sanatorium
Section 7, NE¼NE¼SW¼	Rock tank
Section 7	.5 mile road/trail
Section 7	.3 mile fence

APPENDIX I-3

WILDERNESS INVENTORY REPORT

GRAY PEAK

INTRODUCTION

The Bureau of Land Management (BLM) exchanged lands to Joe Jackson in 1989 and to The Nature Conservancy (TNC) in 1990 for lands in the Peloncillo Mountains in southern Hidalgo County. The land acquired by the BLM were not included in the 1979 initial inventory for wilderness suitability, and contiguous land did not make the initial inventory cut because the land was in isolated parcels of less than 5,000 acres. Sections 201 and 202 of the Federal Land Policy and Management Act (FLPMA) direct the BLM to conduct ongoing inventories of public land resources and identification of significant areas through the Resource Management Plan (RMP) process.

Acquisition of private land in the Peloncillo Mountains between Antelope Pass and Post Office Canyon has created a block of 18,600 acres of public land. This report evaluates the wilderness values of the area.

SIZE

The Gray Peak inventory unit contains 18,600 acres of public land. Roads running north and south through the eastern portion of the area leave a 15,878-acre contiguous roadless unit. The area meets the size requirements of the Wilderness Act of 1964 by having at least 5,000 acres of land. The area is large enough to be effectively preserved in a natural condition. The inventory unit is bounded on the north, west, and south by private and State trust lands, and on the east by roads and private and State trust lands.

NATURALNESS

Human imprints are substantially unnoticeable throughout the inventory unit. Imprints are primarily livestock developments, with roads leading to some of the developments. Roads leading to some of these developments have excluded 2,722 acres of the contiguous public land

from the roadless area. Table I-3 lists imprints of man's work within the inventory area.

Most of the livestock fences are old, wood and barbed wire fences that are not visible except from nearby. Some of the fences are abandoned and consist only of scattered wood posts with occasional strands of barbed wire. The BLM plans to construct approximately 3 miles of new fence in the vicinity of Owl Canyon to benefit desert bighorn sheep.

The dirt tanks and concrete dams are all set in vegetated drainage bottoms where brush or trees obscure visibility of the structures from most directions. The concrete dams support seasonal to perennial ponds and adjacent riparian vegetation that makes these structures blend extremely well with the natural environment. The roads lead to livestock developments such as a well, a developed spring, storage tanks, and dirt tanks. The roads that are listed in the table have actually been excluded from the unit by drawing the boundary around them (cherry-stemmed), but they are listed to show that human developments in the unit do not dominate the landscape. None of the man-made structures cover more than a quarter acre, and the cumulative total of these developments is less than .1 percent of the inventory unit.

The entire inventory unit appears to have been affected primarily by the forces of nature, and the developments are not substantially noticeable in the area as a whole. The unit exhibits an extremely high degree of naturalness, and the landscape and biota reflect a lack of human manipulation.

OPPORTUNITIES FOR SOLITUDE

The inventory unit consists of the most rugged and remote portion of the Peloncillo Mountains. The unit includes a major mountain ridgeline that is 11 miles long with five major peaks along it

and dozens of smaller hills and ridges, all separated by canyons ranging from a few hundred yards to almost a mile across. Oak, pinyon pine, and juniper trees on the higher hills provide an excellent opportunity for vegetation screening that compliments the topographic screening of the area, providing innumerable possibilities for isolating groups and individuals from each other. Visitation to the area is extremely low because of the distance from major population centers and the closure of the area to deer and javelina hunting, which are the two dominant uses of public land in the area. All these factors combine to provide outstanding opportunities for solitude.

OPPORTUNITIES FOR PRIMITIVE AND UNCONFINED RECREATION

The inventory unit provides opportunities for primitive and unconfined types of recreation including hiking, camping, backpacking, hunting, photography, and wildlife observation. The area supports several species of animals and plants that are not found in other parts of New Mexico, and so provides opportunities for viewing wildlife that are otherwise unavailable. The area provides some of the best hunting in New Mexico for feral pigs. The area is currently closed to deer and javelina hunting, but if it is opened some day could provide excellent opportunities for hunting both of these species. The area also supports a small herd of desert bighorn sheep, which are currently listed as threatened in New Mexico by the Department of Game and Fish, but if the species is someday delisted, the area could provide a unique hunting opportunity.

SUPPLEMENTAL VALUES

The inventory unit contains ecological and cultural features of scientific, educational, scenic, and historic values. Many of the canyons contain seasonal springs that are important sources of water for wildlife and plants in a desert climate. Rare fauna known from the area includes the Mexican long-tongued bat, the coati, and the State endangered green rat snake and desert bighorn sheep. TNC lists over 30 State sensitive plant species from this area including the Federal Candidate night-blooming *Cereus greggii*. This portion of the Peloncillo Mountains supports one

of the most extensive and well-developed examples of Madrean evergreen woodland in New Mexico. Vegetation is characterized by many Mexican species of oaks and the Mexican pinyon pine (*Pinus cembroides*). No formal archaeological surveys have been conducted, but caves in the area show evidence of prehistoric use, and some sites show great potential for significant cultural deposits. The area provides opportunities for scientific study of wildlife that are not found in other mountain ranges in New Mexico including both Sonoran desert and Mexican highlands species.

The scenic values of this portion of the Peloncillo Mountains are outstanding. The western escarpment overlooks Rodeo and the San Simon Valley, and provides a spectacular vista from the Chiricahua Mountains including the Chiricahua Wilderness and U.S. Highway 80. On the eastern side, the inventory unit is not visible until the hills are entered, but the eastern side including areas like King Mountain, which consists of sculpted volcanic tuffs supporting dense stands of oak trees in crevices, include some of the most scenic mountains in the Mimbres Resource Area. Gray Peak at the north end of the unit is the largest and most spectacular mountain along State Road 9.

POSSIBILITY OF RECLAIMING HUMAN IMPACTS

The existing developments comprise such a miniscule portion of the area as to preclude any need for reclamation. The existing roads to livestock developments have been excluded from the unit by boundary adjustments. Two old roads through the area have been naturally reclaimed by shifting of alluvial material that has reestablished natural topography and vegetation. No roads or vehicle ways requiring reclamation exist within the inventory unit since the roads were excluded from the unit.

CONCLUSION

The Gray Peak inventory unit is of sufficient size to allow its preservation in a natural condition. There are no private or State trust inholdings. A 15,878-acre roadless area exists which appears to be natural and offers outstanding opportunities for primitive and unconfined types of recreation

including hunting, hiking, backpacking, photography, and wildlife viewing. The area also

contains supplemental values including cultural resources, scenic values, and endangered species.

TABLE I-3
HUMAN IMPRINTS IN THE GRAY PEAK INVENTORY AREA

LEGAL DESCRIPTION	IMPRINTS
T. 28 S., R. 20 W., Section 7	2 miles fence
Section 8	1 mile fence
Section 18, SE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$	Wildlife water catchment
T. 28 S., R. 21 W., Section 10	.25 mile road
Section 10, NW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$	Water tank
Section 11	1.25 miles fence
Section 11, NE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$	Dirt tank
Section 11, SE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$	Dirt tank
Section 12	.75 mile fence
Section 13, NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$	Wildlife water catchment
Section 14	1.2 miles fence
Section 15	.5 mile road
Section 15	1.2 miles fence
Section 21	.5 mile road
Section 22, NE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$	Dirt tank
Section 22, SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$	Dirt tank
Section 22, SE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$	Well
Section 22	.5 mile road
Section 26, SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$	Cement dam
Section 27	1.7 miles fence
Section 28	.75 mile road
Section 28, SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$	Developed spring
Section 33	.25 mile road
Section 33, SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$	Storage tank
T. 29 S., R. 21 W., Section 3, SW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$	Dirt tank
Section 4, NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$	Wildlife water catchment
Section 16, NW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$	Dirt tank
Section 16, SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$	Wildlife water catchment
Section 16, NW $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$	Cement dam
Section 16, NW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$	Cement dam
Section 21, SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$	Cement dam
Section 21, NE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$	Storage tank
Section 22	.6 mile pipeline
Section 27, NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$	Dirt tank
Section 27, SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$	Corrals
Section 27, SW $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$	Cement dam
Section 35	1.1 mile road
T. 30 S., R. 21 W., Section 3, NW $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$	Dirt tank
Section 3	.1 mile road

APPENDIX I-4

WILDERNESS INVENTORY REPORT

APACHE BOX

INTRODUCTION

The Bureau of Land Management (BLM) studied a 932-acre area in Apache Box Canyon for wilderness suitability in the Arizona Mohave Final Wilderness Environmental Impact Statement (BLM 1989). This document recommended the Apache Box as nonsuitable for wilderness designation based on the nonsuitable recommendation of the contiguous Forest Service Hell's Hole wilderness study area (WSA) and the small size of the Apache Box WSA. In 1990, the BLM exchanged lands with The Nature Conservancy (TNC), acquiring new land up Apache Box Canyon from the existing WSA and connecting the WSA to additional BLM-administered public land that was not previously inventoried or studied for wilderness potential. Sections 201 and 202 of the Federal Land Policy and Management Act (FLPMA) direct the BLM to conduct ongoing inventories of public land resources and identification of significant values through the Resource Management Plan (RMP) process.

Acquisition of private land in Apache Box has created a block of 6,840 acres of public land from Apache Box to south of Crookson Peak. This report evaluates the wilderness values of the area.

SIZE

The Apache Box inventory unit contains 6,840 acres of public land. A road from Bittercreek to Red Kelly Tank and another in Alexander Canyon cut off approximately 611 acres, leaving a roadless unit of approximately 6,229 acres. The area meets the size requirements of the Wilderness Act of 1964 by having "...at least 5,000 acres or sufficient size as to make practicable its preservation and use in an unimpaired condition." The inventory unit is bounded on the east and west by private land, on the south by a road that is mostly on public land, and on the north by private and State trust land and the Gila National Forest. There are no private or State trust inholdings.

NATURALNESS

Human imprints are noticeable within parts of the WSA. Livestock fences are numerous and have been built with wood posts cut from juniper trees. Additional illegal woodcutting has occurred through much of the high country from the Apache Box to the southern end of the unit, to the point where most ridges have numerous stumps where trees once were. The mining road into the Box is a scar that is discernable from the western escarpment for 2 miles south of the Box, and switchbacks of this road leading down into the Box plus drill pads at the saddle south of and within the lower portion of the Box negatively impact the naturalness of 2 acres. Although the total disturbed area including the road and drill pads is approximately 2 acres, these impacts draw the attention of observers over a considerably larger area (160 acres). Approximately 9 miles of livestock fences exist within the area, and are located such that it is difficult to be more than 1 mile from a fence within the area. Eight rock, dirt, or concrete tanks, four developed springs, and a windmill also exist within the area, averaging out to one livestock water development per 482 acres. Table I-4 lists existing human impacts within the inventory unit.

The high level of development for livestock management detracts from the naturalness of the area. The livestock water developments are not substantially noticeable except from close by. The fences are often conspicuous from up to a ¼ mile away because of their locations on ridges and the lack of trees that have been cut down to build the fences. The Apache Box Canyon appears to be natural except for the mining development.

OPPORTUNITIES FOR SOLITUDE

The inventory unit is located in a very remote and little used portion of New Mexico, and the whole area provides opportunities for solitude. The mountainous terrain and numerous small canyons

provide excellent opportunities for solitude. The steep, narrow Apache Box Canyon is strewn with large to immense boulders, making travel through the canyon extremely arduous. The difficulty of traversing the canyon coupled with the roar of the rushing stream make the canyon bottom one of the best places in southwestern New Mexico to experience solitude.

OPPORTUNITIES FOR PRIMITIVE AND UNCONFINED RECREATION

The inventory unit provides opportunities for primitive and unconfined recreation including hiking, hunting, camping, photography, and wildlife observation. The diversity and quality of these recreation opportunities in the Apache Box Canyon are exceptional, primarily because of the beauty of the riparian area and extremely enriched diversity of plants and animals supported by the stream. Opportunities for primitive and unconfined recreation throughout the remainder of the area are not outstanding compared to the same types of recreation on surrounding public and Forest Service lands.

SUPPLEMENTAL VALUES

The inventory unit contains both ecological and cultural features of scientific, educational, scenic, and historic values. The perennial water course in Apache Box Canyon supports a nearly pristine riparian area that is home to an extremely diverse flora including eight oak species, one of which (Palmer oak) is considered globally rare (Dunmire 1990). The riparian community further supports both Federally endangered and State endangered species. Several caves show evidence of prehistoric habitation but have not been recorded. A Mogollon rockshelter and an historic house mound, road, and sheep pen have been recorded in the unit. Neither of the recorded sites appear to qualify for listing in the National Register of Historic Places.

POSSIBILITY OF RECLAIMING HUMAN IMPACTS

The livestock developments are fairly noticeable throughout much of the area but will become substantially less noticeable as trees are reestablished on hills and ridges where they have been cut for fence posts and firewood. The road to the drill pads in Apache Box could easily be reclaimed by natural shifting of the talus on the slope in which it was cut. Likewise, the drill pads in Apache Box Canyon could naturally reclaim themselves over time through alluvial and colluvial deposition of soil and rock, and revegetation of the natural plant community. The drill pad at the saddle south of the Box Canyon would require some earthwork to approximate natural contours. The quarry is no longer in use and is being naturally revegetated. Vehicle ways would revegetate substantially with limited use.

CONCLUSION

The Apache Box inventory unit is of sufficient size to allow its preservation in an unimpaired condition. A 6,227-acre block of public land is roadless, but naturalness is variable throughout the area. The Apache Box Canyon is highly natural except for 2 acres of roads and drill pads. The remainder of the area does not have significant surface disturbance, but livestock developments are numerous and in some instances fairly noticeable because of a long-term trend of wood cutting for fence posts and firewood. Many of the hills and ridges look fairly heavily cut over, with abundant stumps and few live trees. The area provides outstanding opportunities for solitude and for primitive and unconfined types of recreation and also has supplemental ecological, scenic, and cultural values, particularly within the Box Canyon. The Apache Box inventory unit will be studied in the Mimbres RMP to determine suitability for designation as wilderness.

TABLE I-4
HUMAN IMPRINTS IN THE GRAY PEAK INVENTORY AREA

LEGAL DESCRIPTION	IMPRINTS
T. 16 S., R. 20 W., Section 8, NE¼NW¼SW¼	Dirt Tank
Section 18	.5 mile boundary fence
Section 19	.5 mile vehicle way
T. 16 S., R. 21 W., Section 3	.5 mile fence
Section 3, NW¼NW¼NW¼	Smith Well
Section 3, SW¼NW¼SW¼	Dirt tank
Section 3, NW¼SE¼SE¼	2 masonry dams
Section 10, SE¼NE¼NE¼	2.5 acre drill pads
Section 10	1 mile road
Section 11, SW¼SW¼SE¼	Dirt tank
Section 12, NE¼NW¼NW¼	Cabin and corrals
Section 12, SW¼SE¼SW¼	Masonry dam
Section 13, SE¼NE¼NE¼	Dirt tank
Section 13, SE¼SW¼SW¼	Apache Reservoir
Section 13	1.3 miles boundary fences
Section 13	.2 mile vehicle way
Section 14, NW¼SW¼SW¼	Fish spring (developed)
Section 14, SE¼SW¼SW¼	Indian Spring (developed)
Section 14	2 miles boundary fences
Section 22, SW¼SE¼NE¼	Developed spring
Section 23, NE¼NW¼NW¼	McNaire Spring (developed)
Section 23, SE¼SW¼	Rock quarry
Section 23	2 miles boundary fences
Section 23	.5 mile road
Section 24, SE¼NW¼SE¼	Cherry Reservoir
Section 24	1.2 miles vehicle way
Section 24	.8 mile interior fence
Section 25	.5 mile interior fence

APPENDIX J

APPENDIX J

GILA RIVER WILD AND SCENIC RIVER INVENTORY REPORT SUMMARY

USDI HERITAGE CONSERVATION AND RECREATION SERVICE 1980

This inventory found that the river from the San Carlos Indian Reservation in Arizona upstream to the confluence of the east and west forks of the Gila River. The inventory determined that the river is free-flowing but varies from pristine to broad sandy floodplains traversing low rolling terrain with agricultural development.

USDI NATIONAL PARK SERVICE 1982

This inventory found that the segment from San Carlos Reservoir in Arizona upstream to the confluence of the east and west forks of the Gila River contained outstandingly remarkable scenic, geologic, fish, wildlife, and cultural values. The narrative description states that:

- Three areas in New Mexico have been identified as important fish habitat by the U.S. Fish and Wildlife Service.
- The Gila is recommended as a component of the New Mexico Rivers System.
- The Redrock Cliffs area has been identified as significant in the New Mexico Natural Areas Inventory.

- The river valley is important habitat for a variety of State-listed endangered species.
- The segment has the richest riparian avifauna in New Mexico.

AMERICAN RIVERS 1988

This inventory determined that the segment within the Mimbres Resource Area has been identified as containing outstandingly remarkable values. The report did not list outstandingly remarkable values but listed agencies that have identified outstanding values including:

- The National Park Service Nationwide Rivers Inventory.
- The Bureau of Land Management.
- The Nature Conservancy list of Priority Aquatic Sites for Biological Diversity Conservation.
- The New Mexico State Parks and Recreation Division.
- The American Whitewater Affiliation's list of outstanding whitewater streams.
- The Bureau of Outdoor Recreation.

APPENDIX K

APPENDIX K
MAJOR SOIL TYPES IN THE MIMBRES RESOURCE AREA

SOIL TYPE	MAJOR SOIL SERIES	APPROXIMATE PERCENT SURVEY AREA
<u>Dona Ana County</u>		
Shallow, well drained soils that formed in eolian material and residuum of basalt. These soils are on uplands and slopes. Slopes range from 1-15 percent.	Aftaden Minlith	5.2
Shallow, well drained soils that formed in residuum of basalt. The soils are on lava flows and ridges. Slopes are 3-25 percent.	Akela Lozier	4.4
Deep, excessively drained soils that formed in mixed alluvium on valley floors of wide arroyos above the Rio Grande Valley. Slopes are 0-40 percent.	Arizo Canutio Bluepoint Caliza	9.2
Deep, well drained soils that formed in mixed alluvium along mountain fronts on fans and terraces. Slopes range from 2-10 percent.	Berino Onite Pinaleno	14.2
Deep, well drained soils that formed in alluvium modified by wind on fans and fan piedmonts. Slopes are 1-5 percent.	Bucklebar	14.2
Moderately deep to shallow, well drained soils that formed in alluvium on level basin floors, fans and terraces. Slopes are 0-3 percent.	Cacique Cruces Casito Terino	3.3
Shallow, well drained soils that formed in gravelly alluvium in old valley fill, ridges and terraces. Slopes are 1-15 percent.	Cave, Tencee Simona Upton, Nickel Harrisburg	6.7
Moderately deep, well drained soils that formed in gravelly alluvium over weathered granitic bedrock. Slopes are 5-15 percent.	Nolam	1.5
Shallow, well drained soils that formed in calcareous alluvium on uplands. Slopes range from 1-15 percent.	Masonfort	2.5
Shallow, well drained soils that formed in alluvium and colluvium that derived from mixed basic igneous bedrock. Slopes range from 13-75 percent.	Motoqua	3.0
Deep, somewhat excessively well drained soils that formed in eolian material on broad fans. Slopes are 1-3 percent.	Pintura Yturbide	2.8
Deep, well drained soils that formed in alluvium on fans and basin floors. Slopes are 0-1 percent.	Reagan Mimbres	2.6
Deep, well drained soils that formed in old unconsolidated alluvium that has been modified by wind and are on broad piedmont fans. Slopes are 0-1 percent.	Wink	16.4
Miscellaneous soil types found on non-BLM lands in Dona Ana County.		14
TOTAL		100%
<u>Grant County</u>		
Moderately deep, well drained soils formed in colluvium and residuum derived mainly from acidic igneous rock. They are on mountains, ridges, and hills and the slope is 3-45 percent.	Abrazo Luzena	20.1
Deep, excessively drained soils formed in alluvium derived from mixed sources. They are on floodplains and alluvial fans and the slope is 0-5 percent.	Arizo Mimbres	.8

APPENDIX K (Continued)
MAJOR SOIL TYPES IN THE MIMBRES RESOURCE AREA

SOIL TYPE	MAJOR SOIL SERIES	APPROXIMATE PERCENT SURVEY AREA
Deep, well drained soils formed on alluvial fans and plains. Slopes are 1 - 5 percent.	Continental Bucklebar	6.8
Deep, excessively drained soils formed in alluvium derived from mixed sources. They are found on floodplains, stream channels, and alluvial fans. Slopes are 0-15 percent.	Ellicot Paymaster	1.9
Deep, well drained soils formed in old alluvium and eolian material derived from conglomerate. They are found on ridges and hills. Slopes are 1-35 percent.	Guy Lonti	11.6
Deep, moderate to well drained soils formed in alluvium derived from mixed sources. They are in bolsons and on flats. Slopes are 0 - 3 percent.	Hondale Verhalen	.8
Deep, well drained soils formed in residuum and old alluvium. They are found on hills and plains. Slopes is 2 - 15 percent.	Judd Manzano Tesaio	3.8
Deep, well drained soils formed in alluvium. They are found on alluvial plains and fans. Slope is 1 - 5 percent.	Mojave Stellar Verhalen	11.0
Deep, well drained soils formed in calcareous alluvium derived from mixed sources. They are found on alluvial fans, side slopes, and piedmonts. Slope is 2 - 15 percent.	Nickel	3.5
Deep, well drained soils formed in calcareous alluvium. They are found on the sides of piedmonts, terraces, alluvial fans and foot slopes. Slopes are 0 - 8 percent.	Tres Hermanos	7.6
Miscellaneous soils found on non-BLM lands in Grant County.		32.1
TOTAL		100%
<u>Hidalgo County</u>		
Excessively to well drained soils formed in sediment from igneous rock. These soils are on alluvial fans and bottoms. Slopes are 0 - 9 percent.	Arizo Comoro Grabe, Glendale Whitlock	.8
Well drained soils formed in material from igneous rock. These soils are found on alluvial fans on uplands. Slope is 0 - 5 percent.	Berino, Forrest Mohave, Pintura Sonoita, Stellar	20.08
Well drained soils formed from material weathered from granite. These soils are found on hills and alluvial fans on uplands. Slope is 1 - 25 percent.	Chiricahua Hap	1.2
Well drained soils formed from mixed igneous rocks mainly rhyolite. These soils are found on old alluvial fans on uplands. Slope is 0 - 15 percent.	Cloverdale Eicks	2.4
Well drained soils formed from mixed igneous rocks. These soils are found on foot slopes of mountains, hills and alluvial fans. Slope is 1 - 60 percent.	Eba Lehmans	18.1
Well drained soils formed from mixed igneous rock. These soils are found on alluvial fans on uplands. Slope is 0 - 5 percent.	Frye, Gila Mimbres, Pinaleno	3.35
Well drained soil formed from weathered basalt bedrock. These soils are found on hills. Slope is 0 - 45 percent.	Graham	

APPENDIX K (Continued)
MAJOR SOIL TYPES IN THE MIMBRES RESOURCE AREA

SOIL TYPE	MAJOR SOIL SERIES	APPROXIMATE PERCENT SURVEY AREA
Well drained soils formed from igneous and sedimentary rock. These soils are found on alluvial fans on uplands. Slopes is 0 - 20 percent.	Jal, Karra Yana	3.35
Well drained soils formed from mixed igneous rock. These soils are found on alluvial fans and bottoms. Slopes is 0 - 3 percent.	Hawkeye Pima	.45
Well drained soils that formed from mixed igneous and sedimentary rock. These soils are found on broad alluvial fans. Slopes is 0 - 5 percent.	Hondale Maricopa Ubar, Vekol	6.8
Well drained soils that formed in old alluvium from basic igneous rock. These soils are found on alluvial fans on uplands and were deposited on older alluvium. Slope is 1 - 4 percent.	Keno	.3
Well drained soils that formed in gravelly old alluvium from mixed igneous rock. These soils are found on piedmont slopes. Slope is 0 - 60 percent.	Nickel Tres Hermanas Upton	14.95
Undrained basins consisting of clay and silty clay sediments that have been deposited by water. Slopes are 0 - 1 percent.	Playas	1.35
Well drained soils formed from mixed igneous and limestone rock. These soils are found on olds alluvial fans on uplands. Slope is 0 - 5 percent.	Terino Tuney	.15
Moderately well drained soils formed in fine textured alluvium. These soils are found in alluvium bottoms. Slope is 0 - 1 percent.	Verhalen	2.6
Excessively drained soils that formed in coarse textured alluvium. These soils are found on alluvial fans. Slope is 0 - 9 percent.	Yturbide	.95
Miscellaneous soils found on non-BLM lands in Hidalgo County.		23.17
TOTAL		100%
<u>Luna County</u>		
Deep somewhat excessively drained soils that formed in mixed material deposited on floodplains and alluvial fans. Slope is 0 - 10 percent.	Bluepoint Onite Verhalen	5.7
Deep well drained soils formed in mixed igneous or granitic rock. These soils are found on fans, foot slopes or around the base of mountains. Slope is 0 - 10 percent.	Eba Sonoita	4.0
Deep well drained soils formed in valley fill sediments derived from mixed igneous rock. These soils are found on intermountain valley floors. Slope is 0 - 3 percent.	Hondale	13.8
Shallow well drained soils that are residual soils formed over acid igneous rock. These soils are found on hills and lower mountain slopes. Slope is 0 - 25 percent.	Lehmans Graham Ledru Lozier	8.9
Deep well drained soils formed in mixed alluvium. These soils are found on floodplains, terraces, and alluvial fans. Slope is 0 - 5 percent.	Mimbres Harkey, Jal Maricopa	12.7
Deep well drained soils formed on old alluvial fans. They are found on alluvial fans. Slope is 0 - 5 percent.	Mojave Stellar, Berino	18.5

APPENDIX K (Concluded)
MAJOR SOIL TYPES IN THE MIMBRES RESOURCE AREA

SOIL TYPE	MAJOR SOIL SERIES	APPROXIMATE PERCENT SURVEY AREA
Excessive to well drained soils formed in old alluvium sediments and sandy deposits that have been reworked by wind. Slope is 0 - 5 percent.	Pintura Berino, Simona Akela	12
Miscellaneous soils found on non-BLM lands in Luna County.		10.9
TOTAL		100%

Source: Soil Conservation Service Soil Surveys 1973, 1980, 1983.

APPENDIX L

APPENDIX L-1
THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND IN THE MIMBRES RESOURCE AREA

Plant Persistence ^{b/}	Scientific Name	Common Name (Family)	Status ^{c/}	Occurrences in the Resource Area	Habitat
S	<u>Acacia millefolia</u>	None (Fabaceae)	SS	Found just north of the Mexican border in Guadalupe Canyon, Guadalupe Mountains.	Plants occur in populations of few individuals.
PF	<u>Agastache verticillata</u>	None (Lamiaceae)	SS	Collected in the Organ Mountains on the military reservations.	Mountainous regions at altitudes over 7,000 feet.
PF	<u>Ageratum corymbosum</u>	None (Asteraceae)	SS	Found in Guadalupe Canyon, Guadalupe Mountains, in the extreme southwest corner of the county.	Occurs on south-facing rocky banks.
S	<u>Apacheria chiricahuensis</u>	Cliff bitterbrush (Crossosomataceae)	SS	Found in Chiricahua Mountains and Apache Box.	Occurs in cliff crevices of rhyolitic rock between 5,800 to 8,000 feet.
PF	<u>Aletes filifolius</u>	None (Apiaceae)	SS	Collected or found in the Organ Mountains on the military reservation, private and public lands, and in the Burro, Big Hatchet, and Guadalupe Mountains.	Occurs in rocky canyons and on cliffs between 6,200 and 7,300 feet with pinyon and juniper species; apparently widespread.
T	<u>Arbutus arizonica</u>	Arizona madrone (Ericaceae)	SS	Found in the Animas Mountains.	Occurs on well-drained, gravelly, sunny sites at altitudes of 4,000 to 8,000 feet.
PF	<u>Asclepias uncialis</u>	Milkweed (Asclepiadaceae)	SS	Found near Silver City.	Occurs in pinyon-juniper stands.
•NF	<u>Aspicarpa hirtella</u>	None (Malphiaceae)	SS	Found in Skull Canyon and Maverick Spring Canyon, Peloncillo Mountains.	Scattered locations. Crevices of open rocky south-facing red rhyolite slopes.
AF	<u>Aster blepharophyllus</u>	None (Asteraceae)	C-2	Found on Las Playas Springs, Hidalgo County on private land.	Occurs on the margins of playas.
PF	<u>Astragalus castetteri</u>	Castetter's milk-vetch (Leguminosae)	SS	Found in San Andres Mountains on military and public lands.	Occurs among pinyon and juniper, on limestone, between 5,000 to 6,000 feet.
PF	<u>Astragalus cobrensis</u> var. <u>maguirei</u>	None (Fabaceae)	SS	Found in Guadalupe Pass, Guadalupe Mountains.	Occurs on soft powdery, gray soils.

APPENDIX L-1 (Continued)
THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND

Plant Persistence ^{b/}	Scientific Name	Common Name (Family)	Status ^{d/}	Occurrences in the Resource Area	Habitat
S	<u>Atriplex griffithsii</u>	Griffith's saltbush (Chenopodiaceae)	SS	Found on dry lakebeds.	Found on the edges of dry lakebeds (playas) at 4,200 feet.
S	<u>Brachystigma wrightii</u>	Wright foxglove (Schrophulariaceae)	SS	Found in Maverick Spring Canyon, Peloncillo Mountains.	Occurs on mountain sides with pinyon and pine between 5,000 and 7,500 feet.
PF	<u>Brickellia lemmoni</u>	None (Asteraceae)	SS	Found in Maverick Spring Canyon, Peloncillo Mountains.	Occurs under oaks among grasses.
PF	<u>Brickellia simplex</u>	None (Asteraceae)	SS	Found in Maverick Spring Canyon and Skull Canyon, Peloncillo Mountains.	Occurs in grassy canyon bottoms under oaks between 5,600 and 5,756 feet.
PF	<u>Castilleja organorum</u>	None (Scrophulariaceae)	SS	Found in Dripping Springs, Organ Mountains on public land.	Occurs on rocky sides of the Organ Mountains at altitudes of 5,700 feet.
C	<u>Cereus greggii</u> var. <u>greggii</u>	Night blooming cereus (Cactaceae)	C-2	Found in the Alamo Hueco Mountains Rough & Ready Hills, Las Uvas Mountains, Franklin Mountains, Flourite Ridge, Carrizalillo Hills, Little Hatchet Mountains, Sierra Rica Mountains, Peloncillo Mountains, Organ Mountains, Potrillo Mountains, and Pyramid Mountains.	Populations are widespread with a few individuals in each. Grows on gravelly range sites with bush muhly, Mormon tea, creosotebush, and range ratany; under or near creosotebush and mesquite in rocky areas; common at lower elevations; granite soil (rhyolite) and deep light soils. Altitudes 4,000 to 4,500 feet.
AF	<u>Cleome multicaulis</u>	None (Capparaceae)	C-2/SE	Collected in the Mesilla Valley, Dona Ana County and in Grant County.	Occurs on alkaline sinks, old saline lake beds, and cienegas from 3,000 to 7,000 feet.
C	<u>Coryphantha orcuttii</u> all varieties	None (Cactaceae)	SE	Found in Mahoney Park, Florida Mountains on private land, found in the Big Hatchet Mountains, and collected on Granite Gap, Peloncillo Mountains.	Occurs on black limestone at altitudes of 5,200 feet (Koenigii) or solitary to clustered with few individuals at altitudes of 7,000 feet (macraxina) or found on exposed outcrops with sotol, Agave, mesquite, and <u>Acacia (orcuttii)</u> .
C	<u>Coryphantha organensis</u>	Organ Mountain coryphantha (Cactaceae)	SE	Found on the Needles, in Dripping Springs, and Fillmore Canyon, Organ Mountains on public land and the military reservation.	Occurs on west-facing mountain slopes.

APPENDIX L-1 (Continued)
THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND

Plant Persistence ^{b/}	Scientific Name	Common Name (Family)	Status ^{c/}	Occurrences in the Resource Area	Habitat
C	<u>Coryphantha scheeri</u>	Scheer's pincushion cactus (Cactaceae)	SE	Widespread but extremely rare in southern New Mexico.	Occurs on open plains and flats, often in alluvial soils from 3,000 to 5,000 feet.
C	<u>Coryphantha sandbergii</u>	Sandberg's pincushion (Cactaceae)	SE	Found on the east slope of the San Andres Mountains.	Occurs on limestone hillsides about mid-slope.
C	<u>Coryphantha sneedii</u> var. <u>sneedii</u>	Sneed's pincushion (Cactaceae)	FL/E/SE	Collected in Anthony Gap, Franklin Mountains.	Occurs on limestone hills on south-, and west-facing slopes with sotol, creosotebush, sumac, and <u>Dalea</u> between 4,300 and 5,400 feet.
T	<u>Cupressus arizonica</u>	Arizona cypress (Cupressaceae)	SR	Found on Cooke's Peak, Cooke's Range.	Scattered to dense stands straddling ridges and downsides. Mixed with pinyon and alligator juniper. Dominant on ridge crests at altitudes from 6,200 to 7,400 feet.
PF	<u>Dalea pulchra</u>	None (Fabaceae)	SR	Found in Guadalupe Canyon, Guadalupe Mountains.	Found on rocky knolls.
PF	<u>Delphinium occidentale</u> var. <u>quercicola</u>	Duncecap larkspur (Ranunculaceae)	SR	Found in the Pinos Altos Mountains, Gila National Forest.	Growing in dry soils among scrub oak thickets.
PF	<u>Draba mogollonica</u>	Whitlowgrass (Brassicaceae)	SS	Collected on Bear Mountain, Gila National Forest, and Whitehorse Mountain on private land.	Species widespread in southwest New Mexico.
PF	<u>Draba stanleyi</u>	None (Brassicaceae)	SS	Found on Little Mountain, near Las Cruces (Tortugas Mountain) and Organ Peak, Organ Mountains on the military reservation.	Occurs in mountainous regions; igneous crevices and boulders.
C	<u>Echinocereus fasciculatus</u>	Hedgehog cactus (Cactaceae)	PSE	Found in the Peloncillo and Big Hatchet Mountains.	Occurs in the foothills and dry desert mountains.
AF	<u>Erigonum densum</u>	None (Polygonaceae)	SS	Collected or found near Bayard and Santa Rita on private land, and on Bear Mountain (near Silver City), Gila National Forest.	Seems to occur around disturbed open rocky areas at altitudes of 5,000 to 6,500 feet. May be extinct.
PF	<u>Eryngium lemmonii</u>	None (Apiaceae)	SS	Found in the Animas Mountains.	Occurs in damp meadows.

APPENDIX L-1 (Continued)
THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND

Plant Persistence ^{b/}	Scientific Name	Common Name (Family)	Status ^{c/}	Occurrences in the Resource Area	Habitat
AF	<u>Erysimum desertorum</u>	None (Brassicaceae)	SS	Collected near Hachita, New Mexico.	Xerophytic members of <u>E. capitatum</u> , <u>E. argillosum</u> complex.
AF	<u>Euphorbia geveri</u> var. <u>wheeleriara</u>	None (Euphorbiaceae)	SS/E-I	Found in Anthony, New Mexico near the Mexican line.	Occurs on deep sand.
AF	<u>Eustoma exaltatum</u>	Prairie gentian (Gentianaceae)	PSE	Found in the Rio Grande Valley, north of Las Cruces on private land.	Occurs on alkaline, wet meadows in sod saltgrass at altitudes of 3,500 feet.
PF	<u>Graptopetalum rusbyi</u>	None (Crassulaceae)	SS	Found in Apache Box along Apache Creek.	Occurs along the creek in the shade with ferns and mosses on quartzite and boulders and in open places among rocks in canyons from 2,500 to 5,200 feet.
BF	<u>Grindelia arizonica</u> var. <u>dentata</u>	None (Asteraceae)	SR	Found on Bear Mountain, Gila National Forest near Silver City.	Mountainous regions.
HS	<u>Haplophylon crooksii</u>	Cockroach plant (Apocynaceae)	SS	Found near Mount Summerford, Dona Ana Mountains, New Mexico State University (College Ranch).	Occurs on south slopes.
PF	<u>Hexalectis spicata</u>	Crested Coral Root (Orchidaceae)	SS	Found in the Animas Mountains.	Found in open oak groves.
*NF	<u>Hymenoxys olivacea</u>	None (Asteraceae)	SR	Found in the Pinos Altos Mountains on private land.	Occurs in mountainous regions.
PF	<u>Hymenoxys vaseyi</u>	Vasey's bitterweed (Asteraceae)	SS	Found in the Organ Mountains	Occurs on dry hillsides from 4,500 to 6,500 feet.
PF	<u>Ibervillea tenuesecta</u>	Cut-leaf Globe Berry (Curcubitaceae)	SS	Found in southern New Mexico and on the College Ranch.	Occurs in desert washes.
*NF	<u>Ipomopsis macombii</u>	None (Polemoniaceae)	SR	Found in Guadalupe Pass, Guadalupe Mountains.	Mountainous regions.
PF	<u>Jatropha macrorhiza</u>	None (Euphorbiaceae)	SS	Found in Mahoney Park, Florida Mountains.	Found growing near a sandy arroyo in flat open country with sumac, Indian paintbrush, fourwing saltbush, and creosotebush.

APPENDIX L-1 (Continued)
THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND

Plant Persistence ^{b/}	Scientific Name	Common Name (Family)	Status ^{c/}	Occurrences in the Resource Area	Habitat
AF	<u>Limosella pubiflora</u>	None (Scrophulariaceae)	SR	Found in the Animas Valley.	Occurs in and around temporary puddles.
BF	<u>Macheranthra amplifolia</u>	None (Asteraceae)	SR	Found in Fillmore Canyon, Organ Mountains on the military reservation.	Mountainous regions.
C	<u>Mammillaria viridiflora</u>	Pincushion cactus (Cactaceae)	SE	Collected or found in the Burro Mountains and Bear Mountain, Gila National Forest, Deadman Canyon on private land, and Skeleton Canyon, Peloncillo Mountains, Coronado National Forest.	Found on north-facing granite slopes and on rhyolite tuff at 6,000 feet.
C	<u>Mammillaria wrightii</u> var. <u>wrightii</u>	Wright's pincushion (Cactaceae)	SE	Found in Dona Ana County and near Silver City.	Occurs on gravelly or sandy hills or plains in desert grassland to pinyon-juniper from 3,000 to 7,000 feet.
C	<u>Mammillaria wrightii</u> var. <u>wilcoxii</u>	Wilcox's pincushion (cactaceae)	SE	Found in Animas and Peloncillo Mountains.	Occurs in the foothills.
PF	<u>Marah gilensis</u>	Gila cucumber (Cucurbitaceae)	SS	Found in the Gila River bottom.	Occurs on sandy soils near streams often in shaded areas from 4,000 to 5,000 feet.
PF	<u>Mecardonia vandelliioides</u>	None (Scrophulariaceae)	SR	Found in Guadalupe Canyon, Guadalupe Mountains, just northeast of the Arizona, New Mexico, and the Mexico border.	Mountainous regions.
PF	<u>Metastelma arizonicum</u>	None (Asclepiadaceae)	SR	Found in Guadalupe Canyon, Guadalupe Mountains.	Occurs on steep southwest-facing slopes.
PF	<u>Milla biflora</u>	Mexican star lily (Liliaceae)	SR	Found in scattered locations, Maverick Springs, Skull and Post Canyons, Peloncillo Mountains.	Found in small numbers on protected north-facing slopes and cliffs.
•NF	<u>Mimulus cordatus</u>	None (Scrophulariaceae)	SR	Found near Animas Creek, Animas Valley on private land and on Bear Mountain, Silver City Range, Gila National Forest.	Found in moist ground along the creek.

APPENDIX L-1 (Continued)
THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND

Plant Persistence ^{b/}	Scientific Name	Common Name (Family)	Status ^{d/}	Occurrences in the Resource Area	Habitat
S	<u>Mimosa grahamii</u>	None (Fabaceae)	SR	Found in Guadalupe Pass, Guadalupe Mountains.	Mountainous regions.
C	<u>Neolloydia intertexta</u>	Visnagita (Cactaceae)	SE	Found in the Franklin and Tres Hermanas Mountains.	Occurs on the foothills of desert mountains.
PF	<u>Oenothera organensis</u>	Organ Mountain Evening Primrose (Onagraceae)	C-2	Found in numerous canyons and on various peaks in the Organ Mountains mostly on the military reservation and public land.	Occurs in wet areas forming dense mats and in steep rocky canyons from 6,000 to 7,000 feet.
C	<u>Opuntia arenaria</u>	Sand prickly pear (Cactaceae)	C-2/SE	Found along the Rio Grande Valley on public and private lands and around the Franklin Mountains	Grows on dunes and inter-dune sandy areas in small (5-12 plants) patches with creosotebush and mesquite.
C	<u>Pediocactus papracanthus</u>	Grama grass cactus (Cactaceae)	C-2/SE	Collected around Pinos Altos near Silver City on private land.	Occurs on sandy soil on open slopes or flats in grassland; often among pinyon and juniper from 5,000 to 7,300 feet.
PF	<u>Pediomelum pentaphyllum</u>	None (Fabaceae)	C-2	Found in the Hachita Valley.	Occurs in sand dunes.
PF	<u>Penstemon alamosensis</u>	Alamo penstemon (Scrophulariaceae)	C-2/SE	Collected on Black Mountain, San Andres Mountains on the military reservation.	Grows in crevices and ledges in limestone cliffs and along canyon bottoms.
*PF	<u>Penstemon bridgesii</u>	Beardtongue (Scrophulariaceae)	SS	Found near San Francisco River Canyon.	Occurs on rocky hillsides, from 4,500 to 7,500 feet.
PF	<u>Penstemon dasphyllus</u>	Thickleaf beardtongue (Scrophulariaceae)	SR	Found in the Cooke's Range and the Big Hatchet Mountains.	Found scattered on gravelly slopes in desert grasslands and on stony hills.
PF	<u>Penstemon lanceolatus</u>	Scarlet-tube beardtongue (Scrophulariaceae)	SR	Found in the Sierra de Las Uvas, Florida Mountains, Cooke's Range, Alamo Hueco Mountains, and Pyramid Mountains.	Found associated with creosotebush, snakeweed, and juniper on rocky soil in draws; on east-facing slopes with ocotillo, Wright silktassel, and Apache plume; scattered on southwest-facing slopes under mountain mahogany and oak and in open areas with various grasses; also on rocky canyons of pinyon-juniper or in pine woodlands.

APPENDIX L-1 (Continued)
THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND

Plant Persistence ^{b/}	Scientific Name	Common Name (Family)	Status ^{c/}	Occurrences in the Resource Area	Habitat
PF	<u>Penstemon linarioides</u> <u>ssp. maguirei</u>	Beard tongue (Scrophulariaceae)	SR	Found in the Lower Gila River Valley.	Very rare.
PF	<u>Penstemon superbus</u>	None (Scrophulariaceae)	SS	Found northwest of Silver City and in the Peloncillo Mountains; on private land in Guadalupe Canyon, Guadalupe Mountains.	Found in the gravels of canyon bottoms and in talus gravels below some cliffs; also occurred in an open arroyo bottom at 4,770 feet. Plants are commonly grazed.
PF	<u>Perityle cernua</u>	Rock daisy (Asteraceae)	C-2/SE	Collected in various canyons in the Organ Mountains on the military reservation.	Occurs in crevices and overhangs on northeast-facing and vertical monzonite and granite cliff faces at elevations of 5,800 to 7,200 feet. Areas receive no sunlight or less than 2 hours per day.
PF	<u>Perityle lemmonii</u>	Rock daisy (Asteraceae)	SR	Found in the Big Hatchet Mountains.	Occurs on limestone cliffs at elevations of 5,300 to 5,600 feet. Is a peripheral species from Mexico, Texas, and Arizona.
PF	<u>Perityle staurophylla</u> <u>var. homoflora</u>	None (Asteraceae)	SS	Collected on Quartzite Mountain in San Andres Mountains on the military reservation.	Found on east-facing limestone cliffs at 5,800 feet and in the pinyon-juniper zone.
*NF	<u>Phacelia tenuipes</u>	None (Hydrophyllaceae)	SS	Found near Carrizalillo Springs, Luna County on private land.	Occurs with <u>Mahonia trifoliata</u> .
FN	<u>Phanerophlebia auriculata</u>	None (Polypodiaceae)	SS	Found near Dripping Springs, Organ Mountains on public land.	Occurs in cool, shady, moist areas on north-facing cliffs. Northern most location in the United States.
S	<u>Philadelphus mearnsii</u>	Mearns' mockorange (Saxifragaceae)	SS	Found in Wamels Draw, Sierra Rica (Cedar).	One plant found in crevice of bare limestone ridge.
PF	<u>Plummera ambigens</u>	None (Asteraceae)	SS	Found in Maverick Spring Canyon, Peloncillo Mountains on private land.	Occurs on sandy gravels in canyon bottoms.
PF	<u>Porophyllum ruderale</u> <u>var. macrocephalum</u>	None (Asteraceae)	SR	Found in Skull Canyon, Peloncillo Mountains and Guadalupe Canyon, Guadalupe Mountains.	Occurred in a small soil pocket on an east-facing open slope.
AG	<u>Puccinellia parishii</u>	None (Poaceae)	C-1	Found near Faywood Cienega	Occurs in wet, alkaline soils.
S	<u>Rubus eximicus</u>	None (Rosaceae)	SR	Collected in Dripping Springs, Organ Mountains.	Found in the Upper Sonoran Zone on the face of cliffs and in deep rocky canyons.

APPENDIX L-1 (Continued)
THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND

Plant Persistence ^{b/}	Scientific Name	Common Name (Family)	Status ^{d/}	Occurrences in the Resource Area	Habitat
PF	<u>Salvia summa</u>	Mountain sage (Lamiaceae)	SS	Found on Rattlesnake Ridge, Organ Mountains on the military reservation.	Occurs at the base of limestone outcrops on a ridge at 5,500 feet.
PF	<u>Scrophularia laevis</u>	Smooth figwort (Scrophulariaceae)	SS	Found and collected on the Organ Needle and Organ Peak, Organ Mountains; on public land and the military reservation.	Found on the highest peak in the Organ Mountains and on a moist, shaded slope high on Organ Peak (7,200 feet).
PF	<u>Scrophularia macrantha</u>	Red figwort (Scrophulariaceae)	C-1/SE	Found on Cooke's Peak, Cooke's Range and on private land in Grant County (San Lorenzo).	Found among rock debris in a cliff area facing northeast among pinyon, juniper, Arizona cypress, and ash, in a wet spot. Few plants present. Also found on a rocky ledge near the summit of a mountain in full or partial shade; from 6,500 to 7,500 feet.
AF	<u>Sicyos glaber</u>	None (Cucurbitaceae)	SS	Collected in various locations on the west side of the Organ Mountains; on the military reservation and on public land.	Occurs in rocky soils on open slopes and in canyons on the west face of the Organ Mountains from 5,000 to 6,000 feet.
PF	<u>Silene plankii</u>	Campion; Plank's catchfly (Caryophyllaceae)	SS	Collected in the Organ Mountains on the military reservation.	Found on vertical east- and west-facing heavily shaded igneous cliffs in canyons and in niches receiving less than 2 hours sunlight per day between 5,800 and 8,000 feet.
PF	<u>Silene thurberi</u>	Thurber's catchfly (Caryophyllaceae)	SS	Found in Skull Canyon, Peloncillo Mountains, and Guadalupe Canyon, Guadalupe Mountains.	Scattered locations in small numbers on protected north-facing rocky slopes and cliffs.
*NF	<u>Silene wrightii</u>	Wright's catchfly (Caryophyllaceae)	SS	Found and collected near Kneeling Nun on private land and in the Cooke's Range.	Occurs in crevices of rocks and on sandstone ledges on north-facing ridges at 7,450 feet.
AF	<u>Sphaeralcea procera</u>	None (Malvaceae)	SR	Collected in Chandler Draw northeast of Deming, New Mexico.	Occurs in sandy arroyos.
PG	<u>Stipa curvifolia</u>	None (Poaceae)	SS	Found near Bishop's Cap, Organ Mountains on the military reservation, and on Tortugas Mountain.	Found on north- and northeast-facing slopes at 4,500 feet.
PF	<u>Talinum humile</u>	Pinos Altos flame flower (Portulacaceae)	C-2/SE	Found near the Kneeling Nun vista on Forest Service lands.	Occurs on rocky south-facing slopes in pinyon/juniper and <u>Agave</u> types.

APPENDIX L-1 (Concluded)
THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND

Plant Persistence ^{b/}	Scientific Name	Common Name (Family)	Status ^{c/}	Occurrences in the Resource Area	Habitat
PF	<u>Talinum longipes</u>	None (Portulacaceae)	SE	Collected on Tortugas Mountain, Dona Ana County.	Mountainous regions.
S	<u>Vauquelinia pauciflora</u>	Mexican rosewood (Rosaceae)	C-2/SE	Found in the Peloncillo Mountains, Coronado National Forest.	Occurs on limestone with juniper, sumac, Wright silktassel, and fendlerbush from 4,100 to 6,100 feet.
S	<u>Yucca shootii</u>	Yucca (Liliaceae)	SS	Found in the Peloncillo Mountains.	Mountainous regions.

Sources: Spellenburg, 1978; Spellenburg, 1979; New Mexico State Forestry, 1991.

Notes: ^{a/} To ensure complete coverage of all threatened, endangered, or sensitive plant species, consideration was given to all species on public land or within 1 mile of public land.

^{b/} Plant Persistence:

* - Information pertaining to plant persistence was not available.

AG - Annual Grass
PG - Perennial Grass
AF - Annual Forb
BF - Biannual Forb
PF - Perennial Forb
NF - Native Forb
HS - Half Shrub
S - Shrub
T - Tree
FN - Fern
C - Cactus

^{c/} Status:

C - Candidate (species designated as "candidate species" by the Fish and Wildlife Service)

1 - Enough information to list

2 - Not enough information to list

FL/E - Federally Listed/Endangered

PSE - Proposed for the State Endangered List

SE - State Endangered

SR - State Review List

SS - State Sensitive (species selected by the New Mexico State Forestry as a special concern element)

APPENDIX L-2
SPECIAL STATUS ANIMALS

COMMON NAME	SCIENTIFIC NAME	STATUS	COUNTY*	HABITAT
<u>Amphibians</u>				
Colorado River Toad	<u>Bufo alvarius</u>	FC2 SE2	H	Mesquite, creosote, and other shrubs
Lowland leopard frog	<u>Rana yavapaiensis</u>	FC2	H	Specific habitat association unknown at present
<u>Birds</u>				
Olivaceous cormorant	<u>Phalacrocorax olivaceus</u>	SE2	D G H	Generally found on larger bodies of water, rivers, and possibly playas
Mississippi kite	<u>Ictinia mississippiensis</u>	SE2	D	Riparian woodlands
Ferruginous hawk	<u>Buteo regalis</u>	FC2	D G H L	Open grassland or grassland/shrub
Common blackhawk	<u>Buteogallus anthracinus</u>	SE2	G H L	Riparian woodlands
Bald eagle	<u>Haliaeetus leucocephalus</u>	FE SE2	D L G	Habitat associated with water but there are some dry land areas where they occur
Peregrine falcon	<u>Falco peregrinus</u>	FE SE1		Cliffs in woodland/ forest types
Wild turkey (Gould's)	<u>Meleagris gallopavo mexicana</u>	SE2	H	Mountainous areas where large oaks predominate
White faced ibis	<u>Plegadis chihi</u>	FC2	H	Marsh playas, irrigated land
Whooping crane	<u>Grus americana</u>	FE SE2	D L	Agricultural fields and valley pastures for feeding, roosting near water
Western snowy plover	<u>Charadrius nivosus</u>	FC2	H	Alkali and salt flats
Long billed curlew	<u>Numenius americanus</u>	FC2	D G H L	Plains, rangelands and shorelines of lakes and marshs
Common ground dove	<u>Columbiana passerina</u>	SE1	D H	Agricultural areas and undeveloped shrubland near these areas
Broad billed hummingbird	<u>Cyanothus latirostris</u>	SE2	H	Riparian woodlands at low elevations
Costas hummingbird	<u>Calypte costae</u>	SE2	H	Arid sites near agricultural areas.
Lucifers hummingbird	<u>Calothorax lucifer</u>	SE2	H	Slopes and canyons in arid montane areas
Violet crowned hummingbird	<u>Amazilia violiceps</u>	SE2	H	Riparian woodlands at moderate elevations
White eared hummingbird	<u>Hylocharis leucotis</u>	SE2	H	pine/oak woodland and adjacent riparian areas

APPENDIX L-2 (continued)
SPECIAL STATUS ANIMALS

COMMON NAME	SCIENTIFIC NAME	STATUS	COUNTY*	HABITAT
Elegant trogon	<u>Torgon elegans</u>	SE1	H	Broadleaf woodlands
Gila woodpecker	<u>Melanerpes uropygialis</u>	SE2	G H	Low elevation woodlands along stream courses
Thick billed kingbird	<u>Tyrannus crassirostris</u>	SE2	H	Riparian areas
Bells vireo	<u>Vireo belli</u>	SE2	D G H L	Dense shrubland or woodland along lowland streams
Gray vireo	<u>Vireo vicinior</u>	SE2	D G H L	Open woodlands and shrublands
Varied bunting	<u>Passerina versicolor</u>	SE2	H	Dense mesquite stands in canyon bottoms
Baird's sparrow	<u>Ammodramus bairdii</u>	SE2	D H L	Desert grasslands
Yellow eyed junco	<u>Junco phaeonotus</u>	SE2	H	Pine/oak woodland and lower slopes in winter
McDowns longspur	<u>Calcarius mcdownii</u>	SE2	D G H L	Habitat associated with desert grassland
Abert's towhee	<u>Pipilo aberti</u>	SE2	G H	Riparian areas
Northern beardless tyrannulet	<u>Camptostoma imberbe</u>	SE1	H	Dense lowland mesquite stands
Buff colored nightjar	<u>Caprimulgus ridgwayi</u>	SE1	H	Arid shrublands and woodlands
<u>Fish</u>				
Loachminnow	<u>Tiaroga cobitis</u>	FT SE2	G	Riffle areas with moderate to rapid water velocities.
Spikedace	<u>Meda fulgida</u>	FT SE2	G H	Cobble bottomed stream margins in winter and areas with sand and gravel in main channel
<u>Mammals</u>				
Colorado chipmunk (Organ Mountains)	<u>Eutamias quadrivittatus</u>	FC2 SE2	D	Pineoak-juniper woodlands
White sided jackrabbit	<u>Lepus callotis</u>	FC2 SE1	H	Desert grassland
Southern pocket gopher	<u>Thomomys umbrinus</u>	SE2	H	Montane area above 6000 ft. but may occur in canyon bottoms down to 4500 ft.
Desert bighorn sheep	<u>Ovis canadensis mexicana</u>	SE1	D H	Open arid, rocky mountains

APPENDIX L-2 (Concluded)
SPECIAL STATUS ANIMALS

COMMON NAME	SCIENTIFIC NAME	STATUS	COUNTY	HABITAT
Gray wolf (Mexican race)	<u>Canis lupus baileyi</u>	FE SE1		Mountain woodlands
Guadalupe pocket gopher	<u>Thomomys quadlupiensis</u>	FC2 SE2	H	
California leafnosed bat	<u>Macrotus californicus</u>	FC2	H	Caves and old mine shafts
Greater western mastiff bat	<u>Eumops perotis</u>	FC	H	Clifs, trees and abandoned buildings
Mexican longnosed bat	<u>Leptonycteris nivalis</u>	FC2 SE2	H	Caves and old mine tunnels
Occult little brown bat	<u>Myotis lucifugus occulti</u>	FC2	H	Hollow trees, caves, old mines
Sanborns longnosed bat	<u>Leptonycteris sanborni</u>	FE SE2	H	Caves and old mine tunnels
Southern yellow bat	<u>Nycteris ega</u>	SE2	H	Riparian woodlands
Spotted bat	<u>Euderma maculatus</u>	FC	D G H L	Open arid areas
<u>Reptiles</u>				
Mexican garter snake	<u>Thomophis eque</u>	FC2 SE2	G H	Pine/oak woodlands and grasslands with mesquite
Narrowhead gartersnake	<u>Thomphis rufipunctatus</u>	FC2 SE2	G H	Riparian areas along stream courses
Green ratsnake	<u>Elaphe triapsis</u>	SE2	G H	rocky canyon bottoms near streams or intermittent water
Gila monster	<u>Heloderma suspectum</u>	SE1	G H	Lower mountain slopes and outwash plains
Bunchgrass lizard	<u>Sceloporus scularis</u>	SE2	H	Intermountain valley grasslands
Ridgenose rattlesnake	<u>Crotalus willardi</u>	FT SE1	H	Canyon bottoms in montane areas
Mountain skink	<u>Eumeces callicephalus</u>	SE2	H	Riparian areas
Giant spotted whiptails	<u>Cnemidophorus burti</u>	FC SE2	H	Canyons and arroyos in and near mountains mesas
Gray checkered whiptail	<u>Cnemidophorus dixonii</u>	FC2 SE2	H	Desert grassland
Texas horned lizard	<u>Phrynosoma cornutum</u>	FC	D	Desert grass/shrubland

Source: BLM Files 1990.

GLOSSARY

GLOSSARY

ADJUSTMENTS IN NUMBERS. Change (increase or decrease) of livestock numbers to conform to the amount of forage produced in an area considering other multiple uses.

AGGREGATE. A mineral material such as sand, gravel, shells, or broken stone.

ALLOTMENT. An area of land designated and managed for grazing of livestock.

ALLUVIAL. Pertaining to material that is transported and deposited by running water.

ALLUVIAL FAN. A fan-shaped accumulation of disintegrated soil material; water deposited and located in a position where the water departs from a steep course to enter upon a flat plain or open valley bottom.

ALLUVIUM. Material, including clay, silt, sand, gravel, or similar unconsolidated sediments, deposited by a stream or other body of running water.

ANIMAL UNIT (AU). Considered to be one mature cow (1,000 pounds) or its equivalent based upon average daily forage consumption of 26 pounds of dry matter per day.

ANIMAL UNIT MONTH (AUM). The amount of food or forage required by an animal unit for one month.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). Areas within the public land where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

ARROYO HABITAT. Intermittent drainages (arroyos) supporting a more varied vegetation composition than the surrounding upland areas.

AVIFAUNA. All birds of a given region.

AVOIDANCE AREAS. These are areas where future rights-of-way may be granted only when no feasible alternative route or designated right-of-way corridor is available. Special terms and conditions may be required.

BASALT. A dark to medium dark-colored, commonly extrusive, igneous rock.

BASIN AND RANGE. Topography characterized by a series of tilted fault block mountain ranges and broad intervening basins.

BASIN AND RANGE PHYSIOGRAPHIC PROVINCE. A province in the southwestern United States characterized by a series of tilted fault blocks forming longitudinal ridges or mountains and broad intervening basin.

BOLSON. A flat-floored desert valley that drains toward a playa or central depression.

BROWSE. (noun) That part of leaf and twig growth of shrubs, woody vines, and trees available for animal consumption. (verb) To consume browse.

CALCAREOUS. Having sufficient accumulation of calcium carbonate (CaCO_3) to effervesce visibly when treated with cold dilute hydrochloric acid (HCl).

CALDERA. A large, basin-shaped volcanic depression the diameter of which is much greater than the vent.

CALICHE. A layer in the soil more or less cemented by calcium carbonate (CaCO_3), commonly found in arid and semiarid regions.

CARBONACEOUS. 1. Coaly. 2. Pertaining to, or composed largely of, carbon. 3. The carbonaceous sediments include original organic tissues and subsequently produced derivatives of which the composition is chemically organized.

CLASSIFICATION OF LANDS. The process of determining whether the lands are more valuable or suitable for transfer or use under particular or various public land laws than for retention in Federal ownership for management purposes.

CLOSED BASIN. A basin is considered closed with respect to surface flow if its topography prevents the occurrence of visible outflow. It is closed hydrologically if neither surface nor underground outflow can occur.

COARSE TEXTURED SOIL. A soil consisting of mostly large particles. It includes sands, loamy sands, and sandy loams. (See Soil Texture.)

COLLUVIUM. A deposit of soil material and rock fragments accumulated at the base of steep slopes as a result of gravitational action.

COLORADO PLATEAU PHYSIOGRAPHIC PROVINCE. A province situated between the Basin and Range and the Southern Rocky Mountains provinces. It is characterized by igneous structures, volcanoes, cinder cones, lava-capped plateaus, and extensive areas of nearly horizontal sedimentary rocks.

CONGLOMERATE. Clastic sedimentary rock composed of rounded fragments varying from small pebbles to large boulders in a cement of calcareous material such as iron oxide, silica, or hardened clay.

COW YEARLONG (CYL). The amount of forage necessary to sustain one cow for a 1-year period. One CYL equals 12 animal unit months.

CRITICAL HABITAT. Portions of the habitat of a wildlife population that, if destroyed or adversely modified, would result in a reduction of the population to a greater extent than destruction of other portions of the habitat.

CULTURAL RESOURCES INVENTORY CLASSES.

Class I - Existing Data Inventory: an inventory study of a defined area designed to provide a narrative overview (cultural resource overview) derived from existing cultural resource information and to provide a compilation of existing cultural resource site record data on which to base the development of the BLM's site record system.

Class II - Sampling Field Inventory: a sample-oriented field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a portion of a defined area in a manner which will allow an objective estimate of the nature and distribution of cultural resources in the entire defined area. The Class II inventory is a tool utilized in management and planning activities as an accurate predictor of cultural resources in the area of consideration. The primary area of consideration for the implementation of a Class II inventory is a planning unit. The secondary area is a specific project in which an intensive field inventory (Class III) is not practical or necessary.

Class III - Intensive Field Inventory: an intensive field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a specified area. Normally, upon completion of such inventories in an area, no further cultural resource inventory work is needed. A Class III inventory is appropriate on small project areas, all areas to be disturbed, and primary cultural resource areas.

DEFERRED ROTATION GRAZING. Discontinuance of grazing on various parts of rangeland in succeeding years, allowing each part of rest successively during the growing season to permit seed production, establishment of seedlings, or restoration of plant vigor. At least two, but usually three or more separate units are required.

DIRT TANK. Usually a permanent earthen structure for holding water temporarily. These are built in high rainfall runoff areas such as an arroyo, canyon, or swale area.

DIVERSITY. The relative degree of abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

DISPOSAL OF LAND. Transfer of land from Federal ownership, including sales, exchanges, and Recreation and Public Purposes.

DRAINAGE BASIN. A part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded water.

ENDANGERED SPECIES.

Federally Listed: any species of animal or plant in danger of extinction throughout all or a significant portion of its range.

State (Group I): species whose prospect of survival or recruitment in the State are in jeopardy in the foreseeable future.

State (Group II): species whose prospect of survival or recruitment within the State may become jeopardized in the foreseeable future.

ENVIRONMENTAL ASSESSMENT (EA). A concise public document for which a Federal agency is responsible that serves to: (a) briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact; (b) aid an agency's compliance with the National Environmental Policy Act (NEPA) when no environmental impact statement is necessary; (c) facilitate preparation of a statement when one is necessary. An EA includes brief discussions of the need for the proposal, of alternatives as required by Sec. 102(2) of NEPA, of the environmental impacts of the proposed action and other alternatives, and a listing of agencies and persons consulted.

EROSION CONTROL STRUCTURES. (or EROSION DIKE) Usually one large earthen, rock, wire, or cement structure used to hold large concentrated flows of water and release this water in small noneroding amounts.

EXCHANGE. A trading of public land (surface or subsurface estates) that usually does not have high public value, for land in other ownerships which does have value for public use, management and enjoyment. The exchange may be for the benefit of other Federal agencies as well as BLM.

EXCLUSION AREAS. These are areas where future rights-of-way may be granted only when mandated by law.

EXISTING UTILITY CORRIDORS. A parcel of land without fixed boundaries, limited only by terrain, land ownership, and environmental considerations.

FAIR MARKET VALUE. The amount in case, or on terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desires but is not obligated to buy.

FINE TEXTURED SOIL. A soil consisting of large quantities of the fine fractions. It includes clay loam, sandy clay loam, silty clay loam, sandy clay, silty clay, and clay textured classes. (See Soil Texture.)

FLPMA. Federal Land Policy and Management Act of 1976, which mandated the BLM Wilderness Review. Often referred to and pronounced "FLIPMA."

FORAGE (COMPETITIVE). Plants which are used as food by large herbivores such as cattle, and by large and small wildlife.

FORB. Any herbaceous nonwoody plant that is not a grass or grass-like plant.

FORMATION. The primary unit of formal geologic mapping or description. Most formations possess certain distinctive or combinations or distinctive lithic features.

GEO THERMAL ENERGY. Useful energy that can be extracted from naturally occurring steam, hot water, or hot rock in the earth's crust.

GRAVITY SURVEYS. A technique of applied geophysics; a survey using a gravity meter on the ground to measure variations in gravitational intensity.

GRAZING CAPACITY. The maximum livestock stocking rate possible without inducing damage to vegetation or related resources such as watershed. This incorporates factors such as suitability of the rangeland for grazing as well as the proper use which can be made on all of the plants within the area. Normally expressed in terms of acres per animal unit month (Ac/AUM) or sometimes referred to as the total AUMs that are available in any given area, such as an allotment. Areas that are unsuitable for livestock use are not computed in the grazing capacity. Grazing capacity may or may not be the same as the stocking rate.

GRAZING DISTRICT (BOUNDARY). Is the specific area within which the public land is administered under Section 3 of the Taylor Grazing Act. Public land outside grazing district boundaries is administered under Section 15 of the Taylor Grazing Act.

GRAZING LEASE. A document authorizing use of public land outside grazing districts for the purpose of grazing livestock under Section 15 of the Taylor Grazing Act.

GRAZING PREFERENCE. The total number of animal unit months of livestock grazing on public land apportioned and attached to base property owned or controlled by a permittee or lessee.

HABITAT. An area where a plant or animal lives. Sum total of environmental conditions in the area.

HABITAT MANAGEMENT PLAN (HMP). A written and officially approved plan for a specific geographical area of public land which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

HARDENED. Development of recreation sites or areas to prevent or limit the impact of recreation use on soil, vegetation, and other resources. Methods of "hardening" include construction of trails and designated use areas such as campsites and picnic sites.

HERD UNIT. Big game habitat within a defined geographical area designated by the New Mexico Department of Game and Fish for management purposes.

HISTORIC CULTURAL RESOURCES. Historic cultural resources include all mines, ranches, towns, resorts, railroads, trails, and other evidence of human use from the entrance of the Spanish to 1932.

HYDROCARBONS. Any organic compound, gaseous liquid, or solid consisting solely of carbon and hydrogen, such as crude oil.

IGNEOUS ROCKS. Rocks formed by solidification of magma.

INTRUSION. 1. A feature (landform, vegetation, or structure) which is generally considered out of context because of excessive contrast and disharmony with characteristic landscape. 2. Igneous rock formed by the emplacement of magma.

INTRUSIVE ROCK. Igneous rock formed by the emplacement of molten material in pre-existing rock.

KIND OF LIVESTOCK. Kinds of domestic livestock grazing on rangeland including cattle, horse, sheep, goats, or a combination of these. May be broken down to greater detail such as cows with calves, yearlings, steers, ewes, ewes with lambs, etc.

KNOWN GEOTHERMAL RESOURCE AREA. An area in which the geology, nearby discoveries, or competitive interests would indicate that commercial production of geothermal resources is probable.

LITHIC. A stone or rock exhibiting modification by humans. It generally applies to projectile points, scrapers, and chips, rather than ground stone.

LITHIC SCATTER. A prehistoric cultural site type where flakes, cores, and stone tools are located through the manufacture or use of the tools.

MAGMA. Naturally occurring mobile rock material generated within the earth and capable of intrusion and extrusion from which igneous rocks are derived through solidification and related processes.

MAGNETIC PROSPECTING. A technique of applied geophysics; a survey using a magnetometer on the ground or from the air to measure variations in magnetic intensity.

MAJOR LAND RESOURCE AREA (MLRA). Large geographic areas of land characterized by particular patterns of soil, climate, water resources, and land use.

MALPAIS. A Spanish word meaning rough country underlain by dark basaltic lava.

MANAGEMENT FRAMEWORK PLAN (MFP).

A planning decision document that establishes for a given planning area land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection. A MFP is prepared in three steps: (1) resource recommendations, (2) impact analysis and alternative development, and (3) decisionmaking.

MEDIUM TEXTURED SOIL. Intermediate between fine textured and coarse textured soil. It includes very fine sandy loam, loam, silt loam, and silt. (See Soil Texture.)

MELANISTIC. Any darkness of the skin, hair, or eyes resulting from high pigmentation.

METAMORPHISM. Process by which consolidated rocks are altered in composition, texture, or internal structure.

MINERALIZATION. The process of converting or being converted into a mineral.

MULTIPLE USE. The management of the various surface and subsurface resources so that they are utilized in the combination that will best meet the present and future needs of the American people.

MULTIPLE USE MANAGEMENT. Consists of managing to meet one or more of the following objectives: (a) domestic livestock grazing, (b) fish and wildlife development and utilization, (c) industrial development, (d) mineral production, (e) occupancy, (f) outdoor recreation, (g) timber production, (h) watershed protection, (i) wilderness preservation, and (j) preservation of public values.

OFF-ROAD VEHICLE (ORV). Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

PALEOENVIRONMENTAL STUDIES. Studies using fossilized pollen and other geological and biological remains to determine past climatic conditions.

PERCOLATION. The downward entry of water into the soil.

PERENNIAL STREAM. A stream or portion of a stream which flows continuously.

PETROGLYPH. A form of rock art manufactured by incising, scratching, or pecking designs into rock surfaces.

PLAYA. The usually dry and nearly level lake plain that occupies the lowest part of a closed depression.

POTTERY SCATTER. A Mogollon to Historic cultural site type where pot-sherds are concentrated; usually a small site.

PUBLIC LAND. Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except:

- lands located on the Outer Continental Shelf
- lands held for the benefit of Indians, Aleuts, and Eskimos
- lands in which the United States retains the minerals, but surface is private.

PUBLIC LAND LAWS. The body of laws which regulates the administration of the public land and the resources thereon.

PUMICE. Glassy lava, generally composed of rhyolite.

RANGE BETTERMENT FUND. The separate account in the National Treasury established by Section 401(b)(1) of the Federal Land Policy and Management Act of 1976, consisting of 50 percentum of all monies received by the United States as fees for grazing livestock on public land.

RANGE SITE. Rangeland that differs in its ability to produce a characteristic natural plant community. A range site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differ from other range sites in the kind or proportion of species or in total production.

RANGELAND. Land used for grazing by livestock and big game animals on which the vegetation is dominated by grasses, grass-like plants, forbs, or shrubs.

RANGELAND CONDITION (ECOLOGICAL).

The present state of the vegetation on a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the climax plant community for the site. Rangeland condition is basically an ecological rating of the plant community.

Four classes are used to express the degree to which the composition of the present plant community reflects that of the climax.

Ecological Condition Class	Percentage of Present Plant Community that is Climax for the Range Site
Excellent	76 - 100
Good	51 - 75
Fair	26 - 50
Poor	0 - 25

RANGELAND CONDITION TREND. The direction of change in rangeland condition.

RANGELAND IMPROVEMENT. Any activity or program on or relating to rangelands which is designed to improve production of forage, change vegetation composition, control patterns of use, provide water, stabilize soil and water conditions, and provide habitat for livestock or wildlife.

RAPTOR. Any predatory bird (such as a falcon, hawk, eagle, or owl) that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for tearing flesh.

REST ROTATION GRAZING SYSTEM. A grazing system providing for systematic and sequential grazing by livestock and resting from livestock use on a rangeland area to provide for the production of livestock while simultaneously maintaining or improving the vegetation and soil fertility.

RIFT. A system of fractures (faults) in the earth's crust and the associated valley or depression.

RIGHT-OF-WAY. Authorization to use public land for a specified purpose. Examples are roads,

powerlines, pipelines, water wells, and communication sites.

RIPARIAN VEGETATION. Vegetation which occurs in or adjacent to drainage ways or their floodplains.

ROAD. For the purpose of the BLM's wilderness inventory, the following definition has been adopted from the legislative history of the Federal Land Policy and Management Act:

"The word 'roadless' refers to the absence of roads which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. A trail maintained solely by the passage of vehicles does not constitute a road."

To clarify this definition, the following subdefinitions also apply:

"Improved and maintained" - Actions taken physically by man to keep a road open to vehicular traffic. "Improved" does not necessarily mean formal construction. "Maintained" does not necessarily mean annual maintenance.

"Mechanical means" - Use of hand or power machinery or tools.

"Relatively regular and continuous use" - Vehicular use which has occurred and will continue to occur on a relatively regular basis. Examples are: access roads for equipment to maintain a stock water tank or other established water sources, access roads to maintained recreation sites or facilities, or access roads to mining claims.

ROCK ART (PETROGLYPH OR PICTOGRAPH). An Archaic to Modern cultural site type consisting of incised figures such as people, animals, plants, or abstracts on a rock surface.

ROCK SHELTER. A cultural site type representative of all periods consisting of an area protected by an overhanging cliff. Often associated with the same materials as a campsite or rock art.

SEDIMENTARY ROCKS. Rocks formed by the consolidation of loose sediment. Sedimentary is one of the three classes of rocks, the other two being igneous and metamorphic.

SOIL SERIES. A group of soils having genetic horizons (layers) that, except for texture of the surface layer, have similar characteristics and arrangement in the profile.

SOIL TEXTURE. The relative proportions of sand, silt, and clay in a soil as described by classes of soil texture. Soil textural classes recognized are:

sand	silt loam	silty clay loam
loamy sand	silt	silty clay
sandy loam	sandy clay loam	clay
loam	clay loam	

Modifiers placed on textural classes when appropriate are:

gravelly	very cobbly
very gravelly	stony
cobbly	very stony

SPLIT ESTATE. Refers to the situation where the mineral estate is owned or controlled by a party other than the owner of the surface of the same land area.

THREATENED SPECIES. Any species likely to become endangered within the foreseeable future throughout all or a significant part of its range.

TUFF A compacted deposit of volcanic ash and dust.

UPLIFT. Elevation of any part of the earth's surface relative to some other parts.

VEGETATION TREATMENTS. Methods used to control the growth and spread of undesirable vegetation. Control can be by chemical or mechanical means or by fire.

VILLAGE. A Mogollon to Historic cultural site type consisting of a permanent habitation area containing several types of artifacts, evidence of agriculture, and structures.

VISUAL RESOURCES MANAGEMENT (VRM) CLASSES. VRM Classes are based on relative visual ratings of inventoried lands. Each class describes the different degree of modification allowed to the basic elements of the landscape. The following are the minimum management objective for each class.

Class I: Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to Visual Areas of Critical Environmental Concern, wilderness areas, wild and scenic rivers, and other similar situations.

Class II: Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the landscape. A contrast may be seen but should not attract attention.

Class III: Contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

Class IV: Contrasts may attract attention and be a dominant feature in the landscape in terms of scale. However, the changes should repeat the basic elements of the landscape.

VOLCANIC ROCK. An igneous rock resulting from volcanic action at or near the earth's surface.

WILDERNESS. The definition contained in Section 2(c) of the Wilderness Act of 1964 is as follows: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain." Wilderness is an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

WILDERNESS AREA. An area formally designated by Congress as part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. Those characteristics of wilderness as described in Section 2(c) of the Wilderness Act. These include size, naturalness, solitude, primitive and unconfined type of recreation, and supplemental values.

WILDERNESS INVENTORY. An evaluation of the public land in the form of a written description and a map showing those lands that meet the wilderness criteria as established under Section 603(a) of the Federal Land Policy and Management Act and Section 2(c) of the Wilderness Act. The lands meeting the criteria will be referred to as Wilderness Study Areas (WSAs). Those lands identified as not meeting wilderness criteria will be released from further wilderness consideration.

WILDERNESS REVIEW. The term used to cover the entire wilderness inventory, study, and reporting phases of the wilderness program of the BLM.

WILDERNESS STUDY. The process of analyzing and planning wilderness preservation opportunities along with other resource opportunities within the BLM's planning system.

WILDLIFE. Includes all species of mammals, birds, molluscs, crustaceans, amphibians, reptiles, or their progeny or eggs which, whether raised in captivity or not, are normally found in a wild state. Feral horses and burrows are excluded.

WITHDRAWAL. An action that restricts the use of public land and segregates the land from some or all of the public land or mineral laws.

YEARLONG GRAZING. Continuous grazing for a calendar year.

ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern	NHPA	National Historic Preservation Act
ACHP	Advisory Council on Historic Preservation	NMDGF	New Mexico Department of Game and Fish
ADC	Animal Damage Control	NMSO	New Mexico State Office (BLM)
AIRFA	American Indian Religious Freedom Act	NMSU	New Mexico State University
AMP	Allotment Management Plan	NNL	National Natural Landmark
ARPA	Archaeological Resources Protection Act	NOI	Notice of Intent
AUM	Animal Unit Month	NOL	Not Open to Leasing
CEQ	Council on Environmental Quality	NSO	No Surface Occupancy
C&MU	Classification and Multiple Use Act	OMRL	Organ Mountains Recreation Lands
EA	Environmental Assessment	ONA	Outstanding Natural Area
EIS	Environmental Impact Statement	ORV	Off-Road Vehicle
FLPMA	Federal Land Policy and Management Act	PRIA	Public Rangelands Improvement Act
FWS	U.S. Fish and Wildlife Service	RNA	Research Natural Area
HMP	Habitat Management Plan	ROS	Recreation Opportunity Spectrum
IMP	Interim Management Policy	ROD	Record of Decision
ISA	Instant Study Area	R&PP	Recreation and Public Purpose
KGRA	Known Geothermal Resource Area	SCORP	Statewide Comprehensive Outdoor Recreation Plan
MFP	Management Framework Plan	SCS	Soil Conservation Service
MLRA	Major Land Resource Area	SHPO	State Historic Preservation Office
MOU	Memorandum of Understanding	SHS	Standard Habitat Site
MSA	Management Situation Analysis	SMA	Special Management Area
NASA	National Aeronautics and Space Administration	SRMA	Special Recreation Management Area
NEPA	National Environmental Policy Act	USDA	U.S. Department of Agriculture
		USFS	U.S. Forest Service
		VRM	Visual Resource Management
		WSA	Wilderness Study Area
		WSMR	White Sands Missile Range

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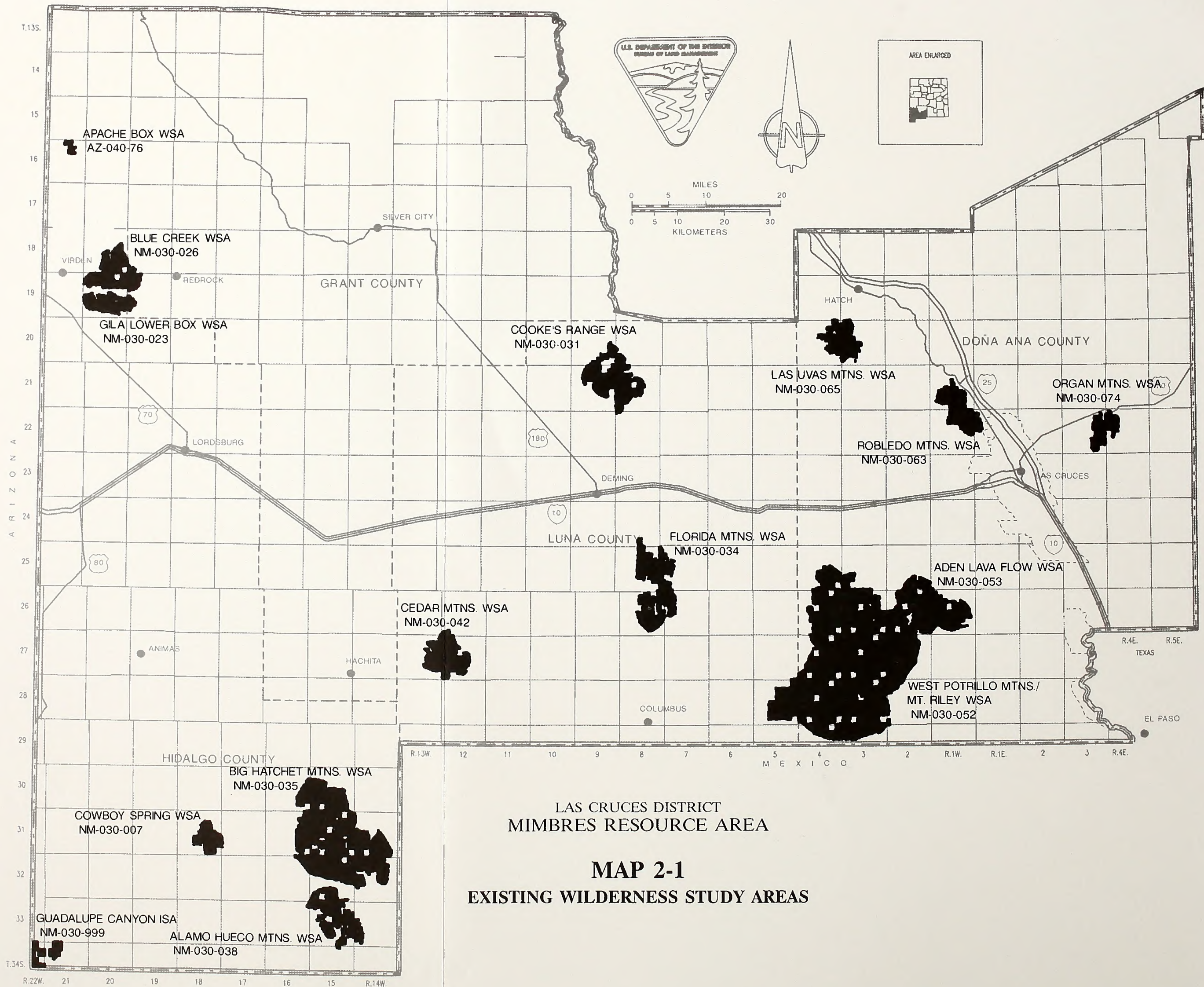
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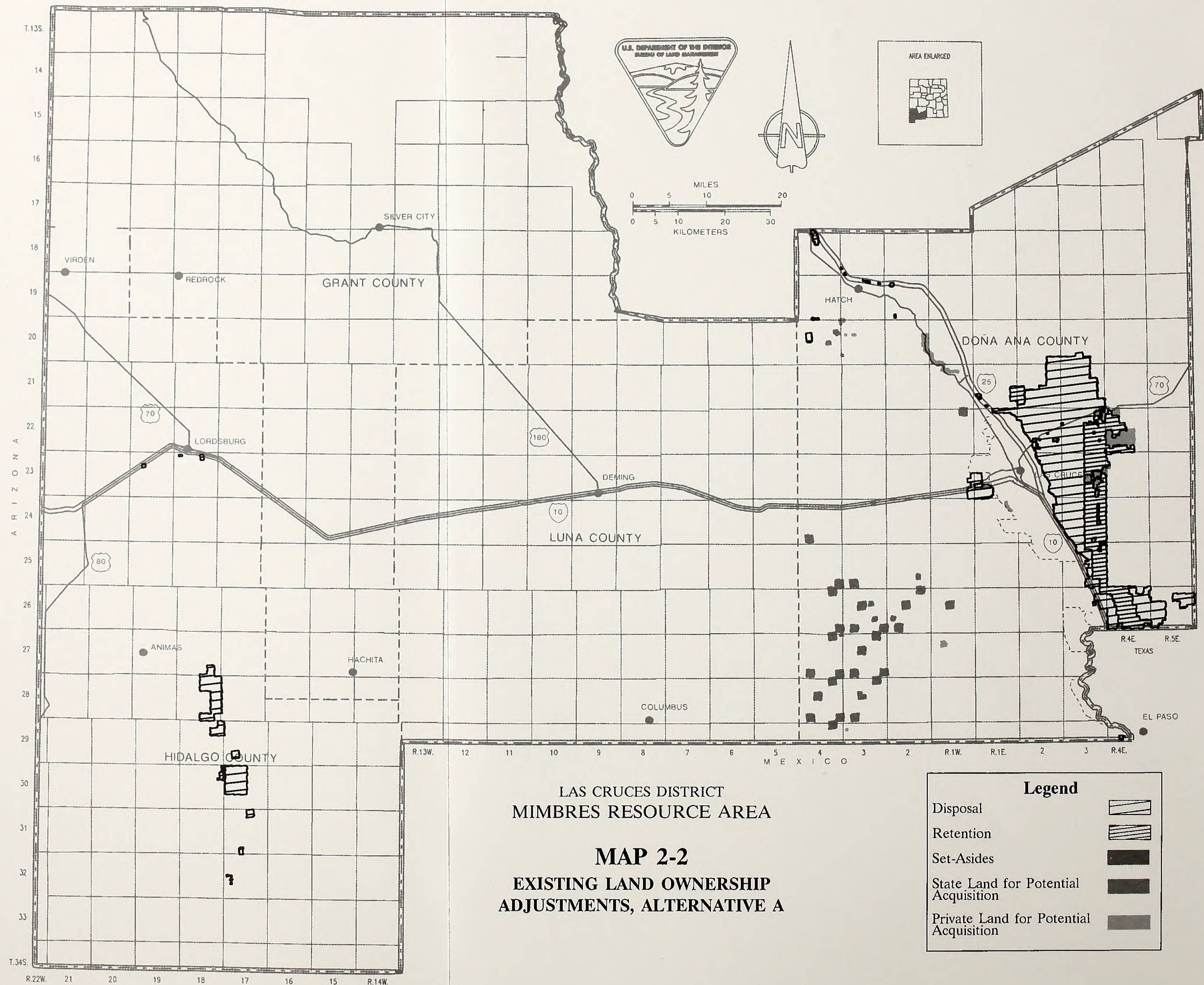
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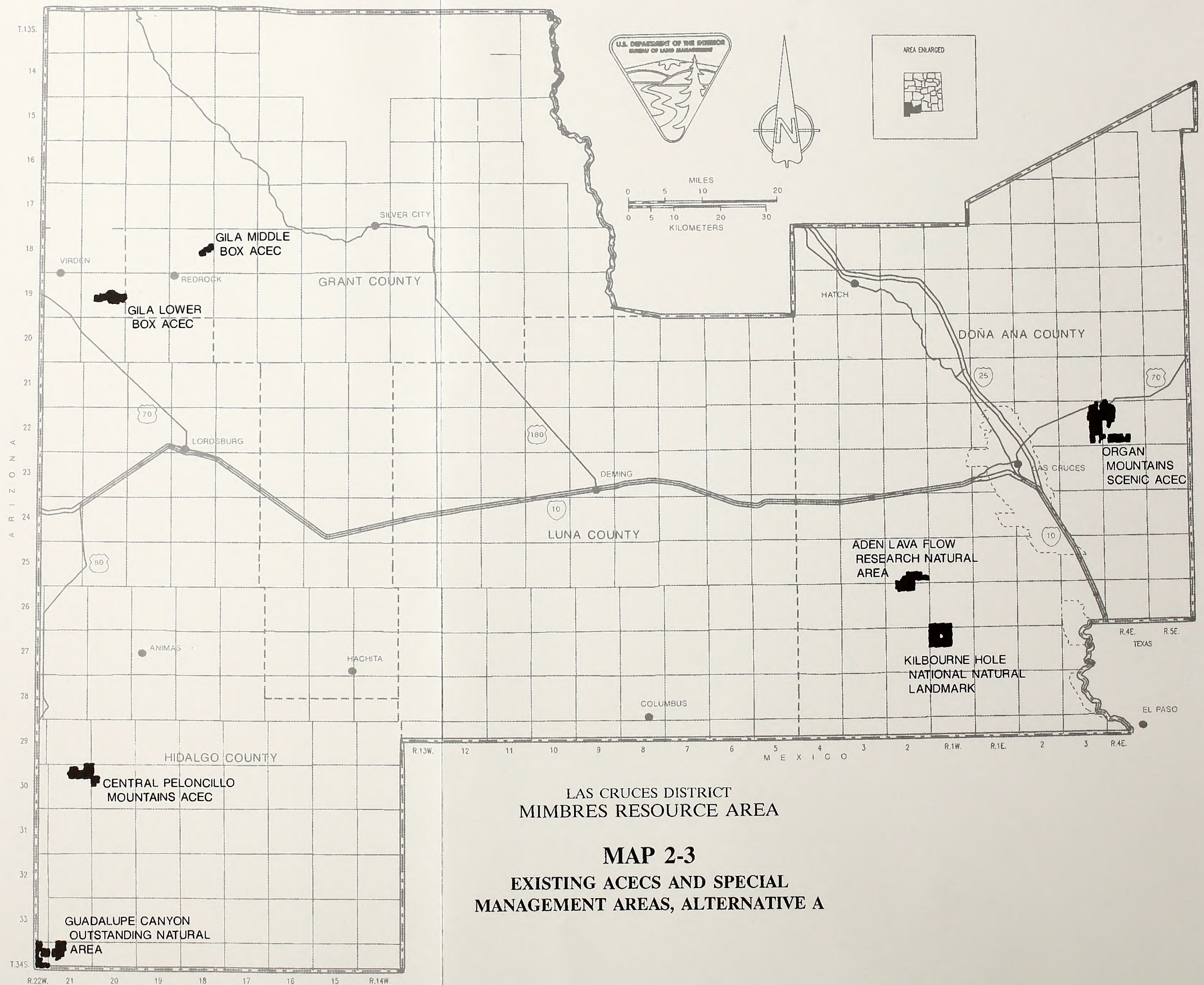
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MIMBRES RESOURCE AREA

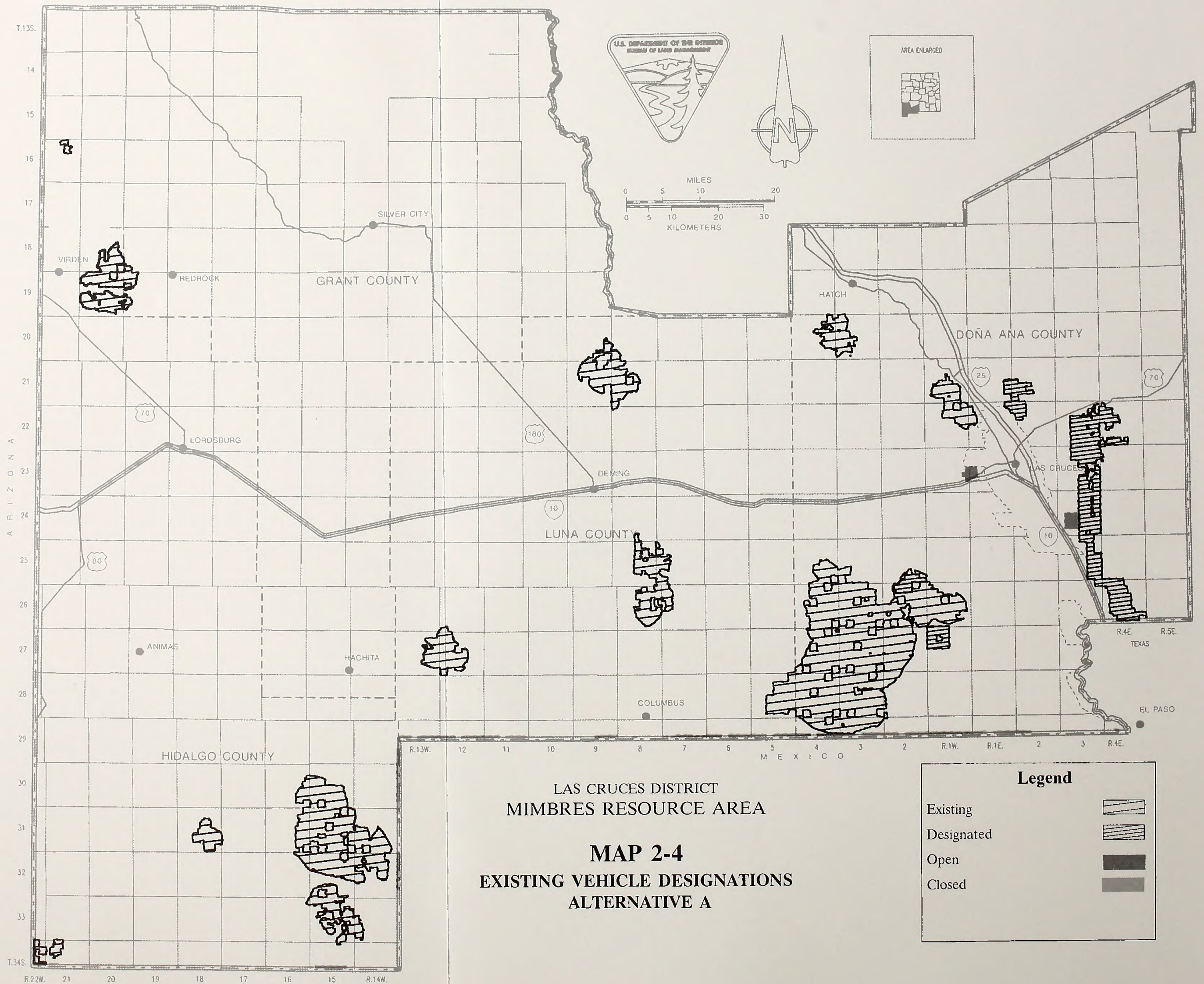
MAP 2-2

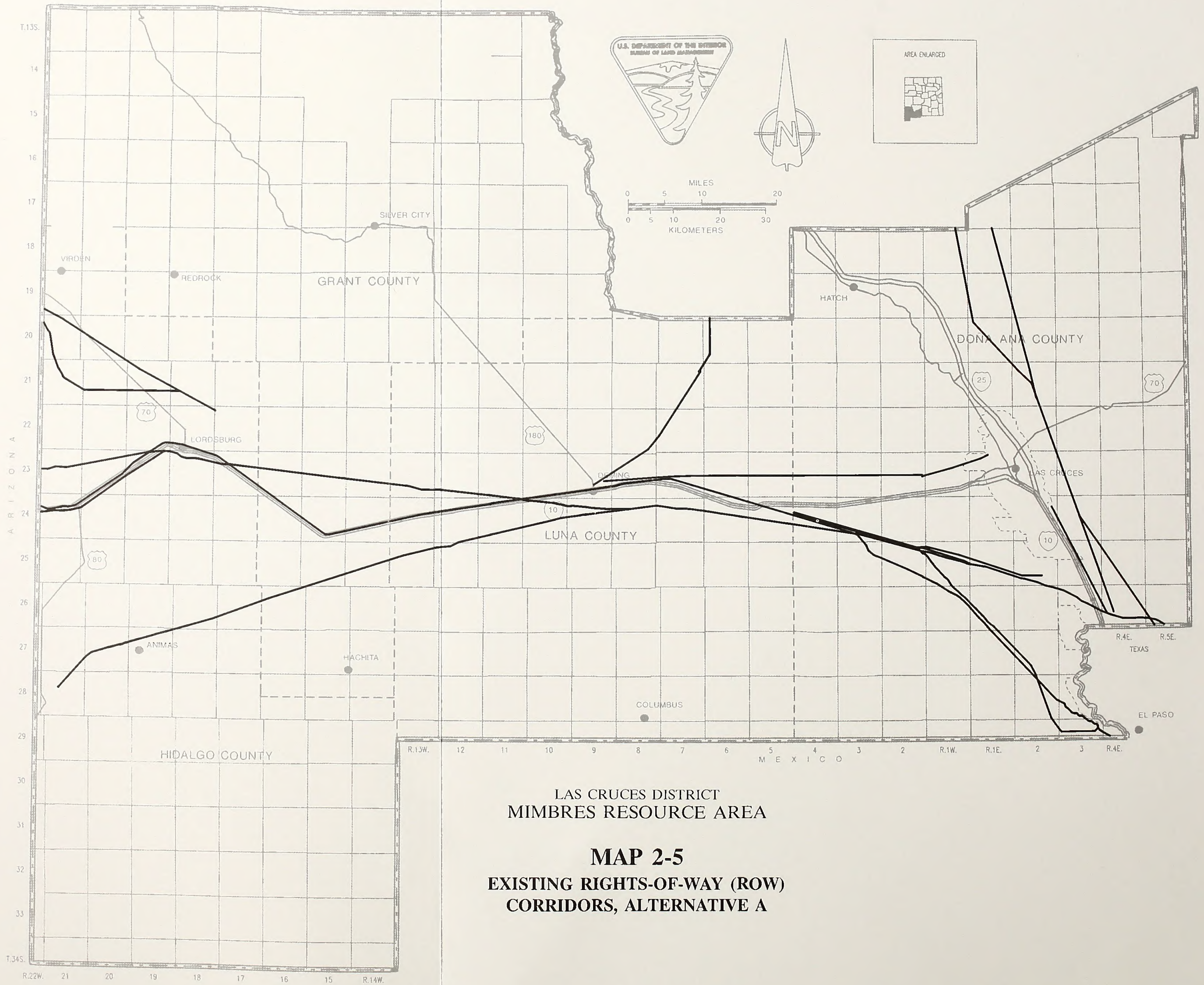
EXISTING LAND OWNERSHIP
ADJUSTMENTS, ALTERNATIVE A

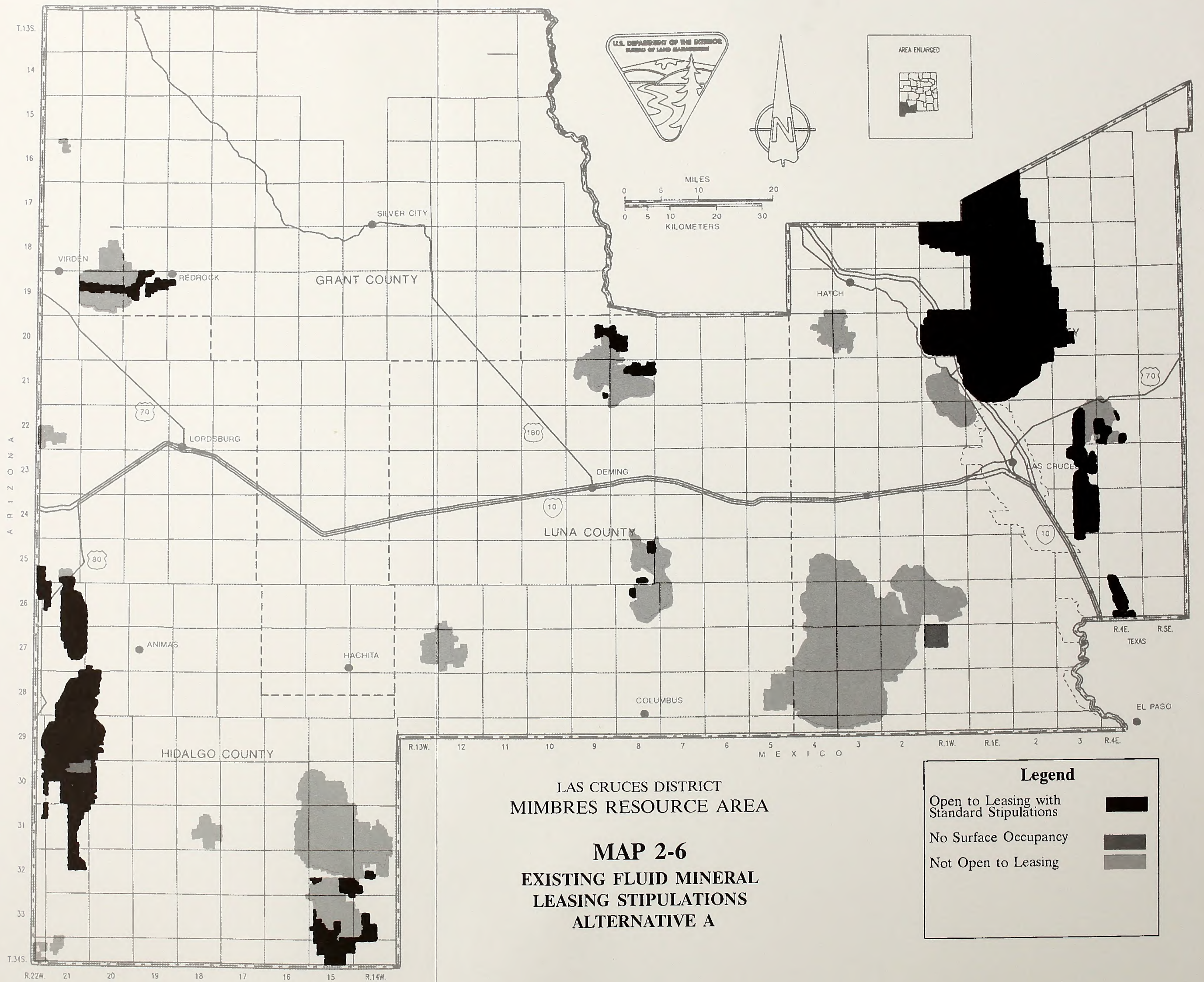
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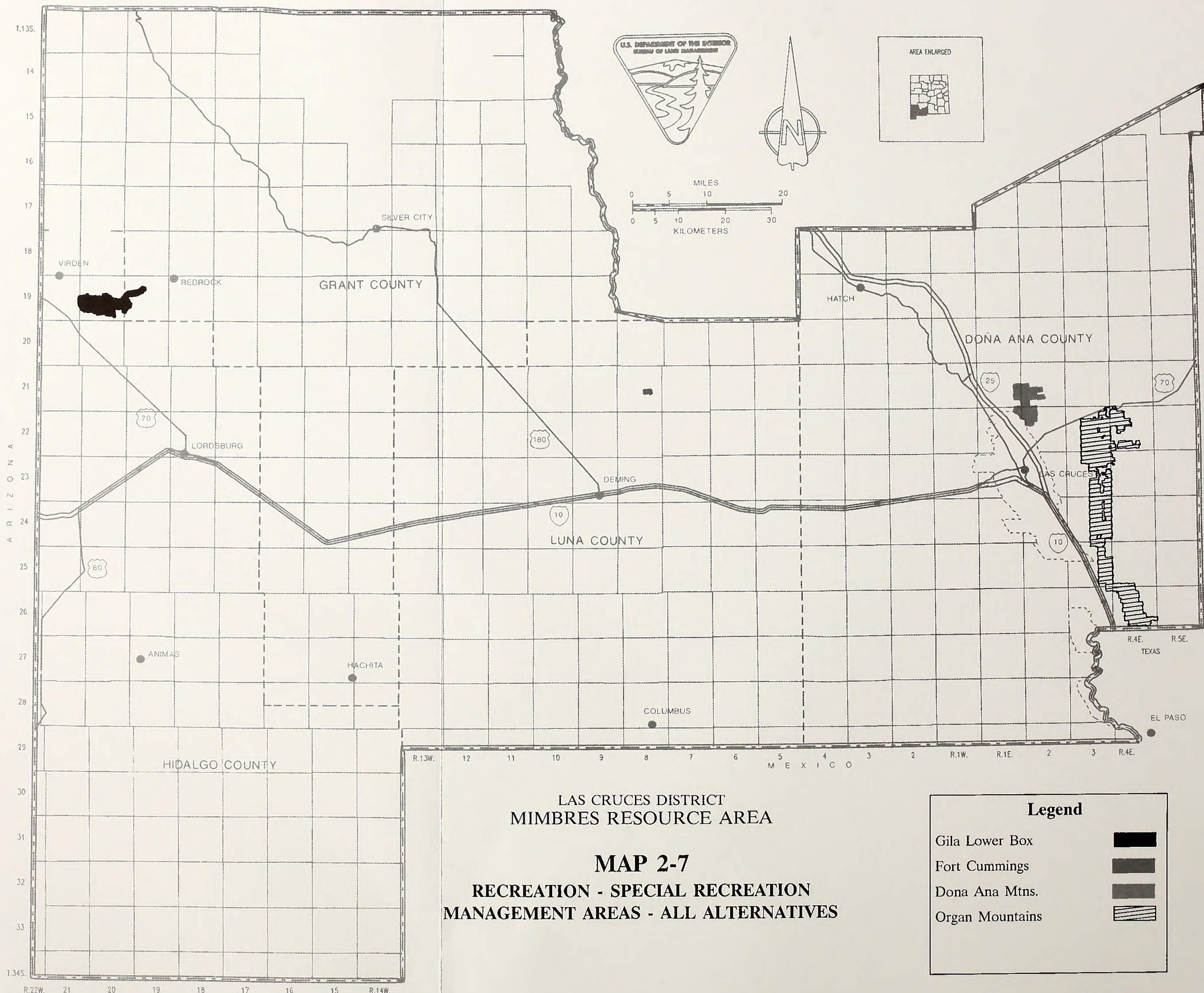
Disposal	
Retention	
Set-Asides	
State Land for Potential Acquisition	
Private Land for Potential Acquisition	











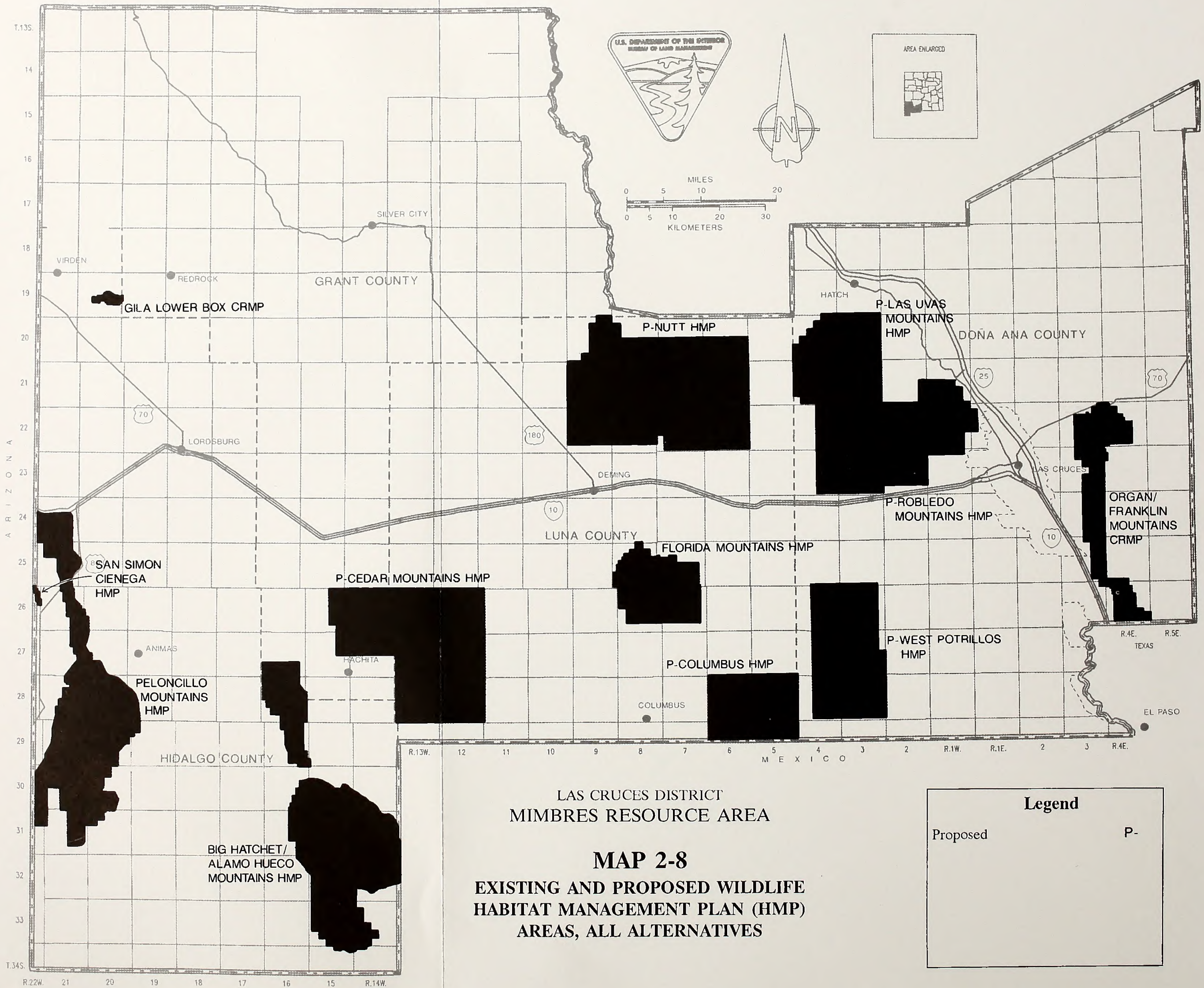
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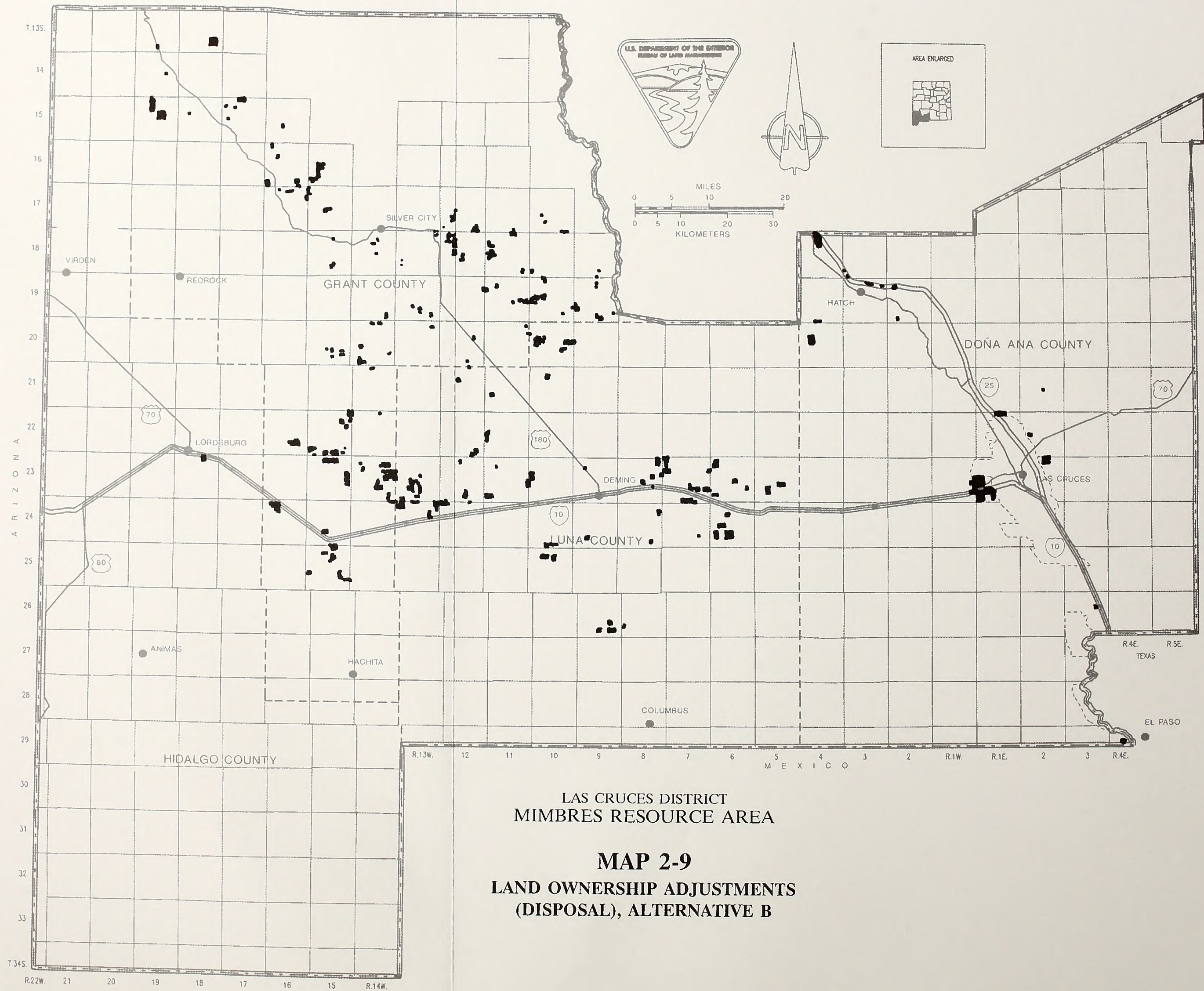
MAP 2-7

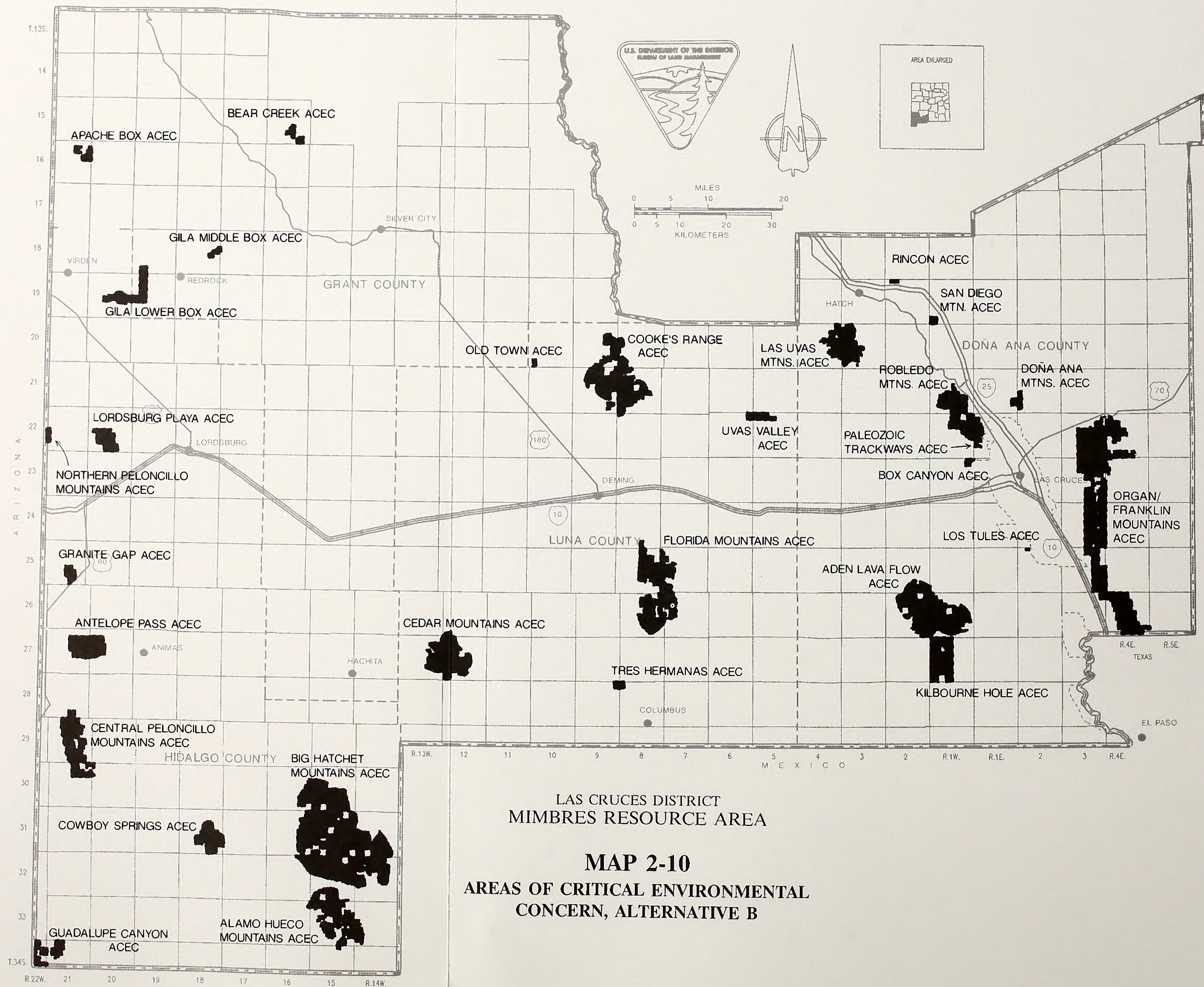
**RECREATION - SPECIAL RECREATION
MANAGEMENT AREAS - ALL ALTERNATIVES**

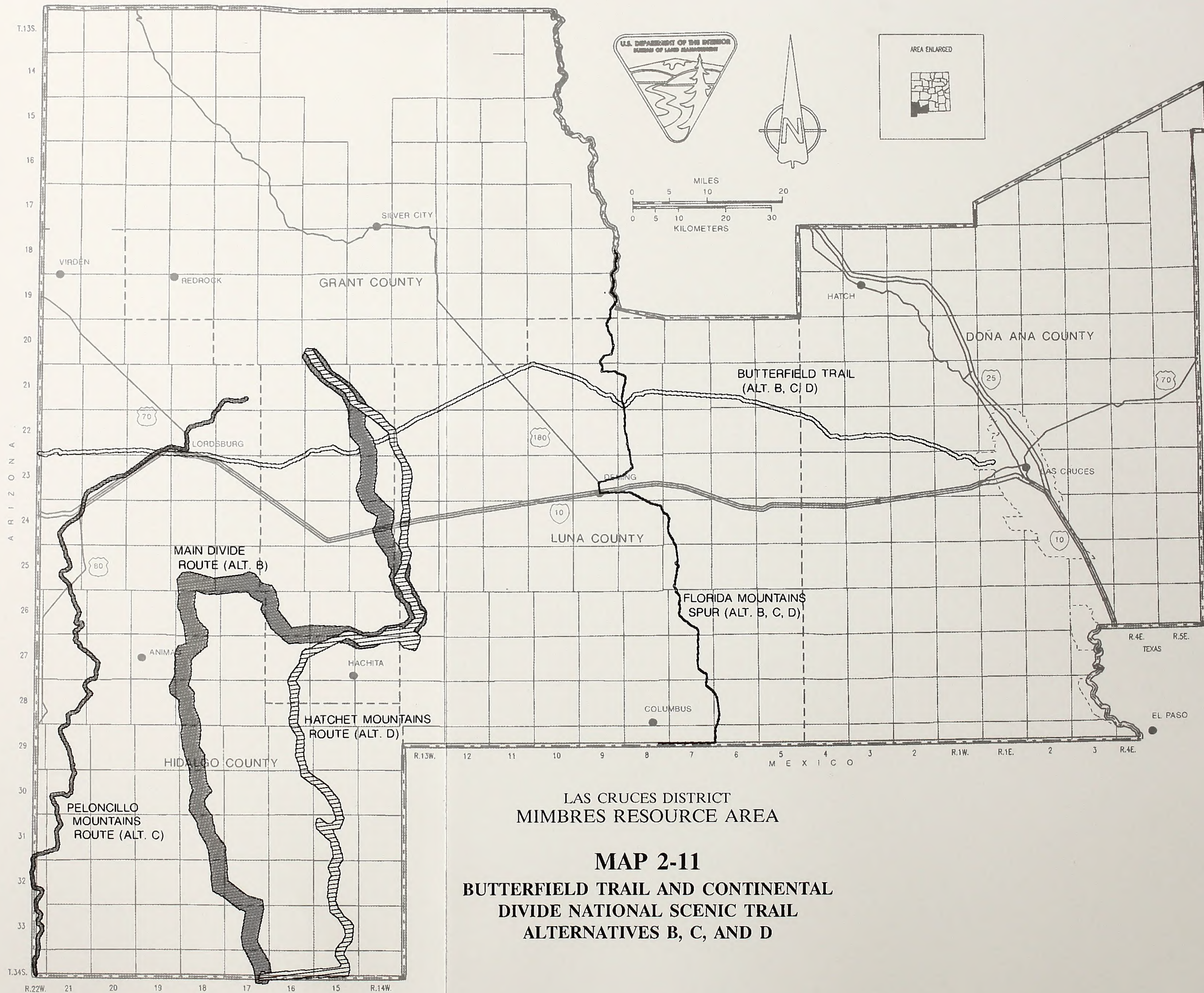
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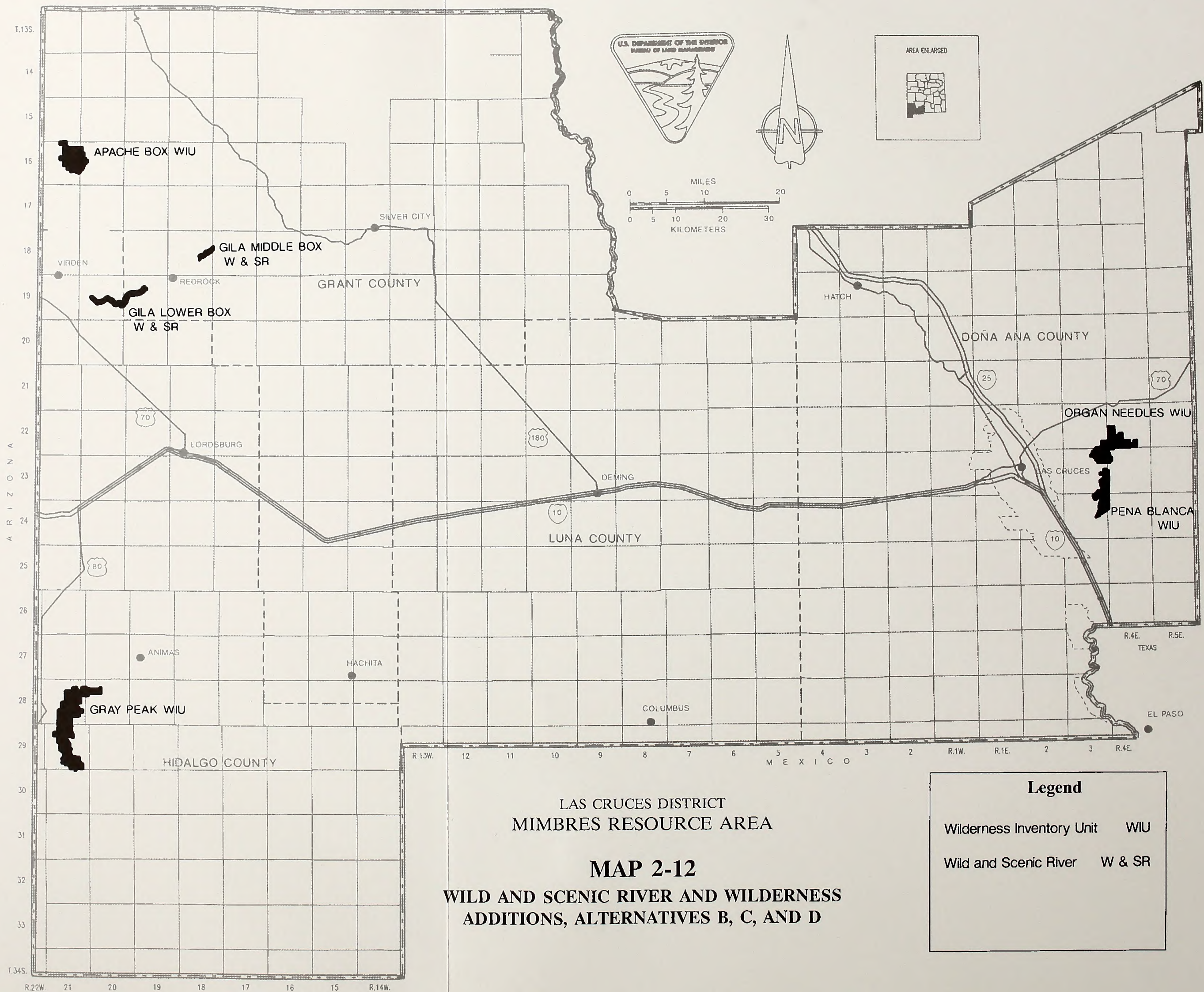
Gila Lower Box	
Fort Cummings	
Dona Ana Mtns.	
Organ Mountains	

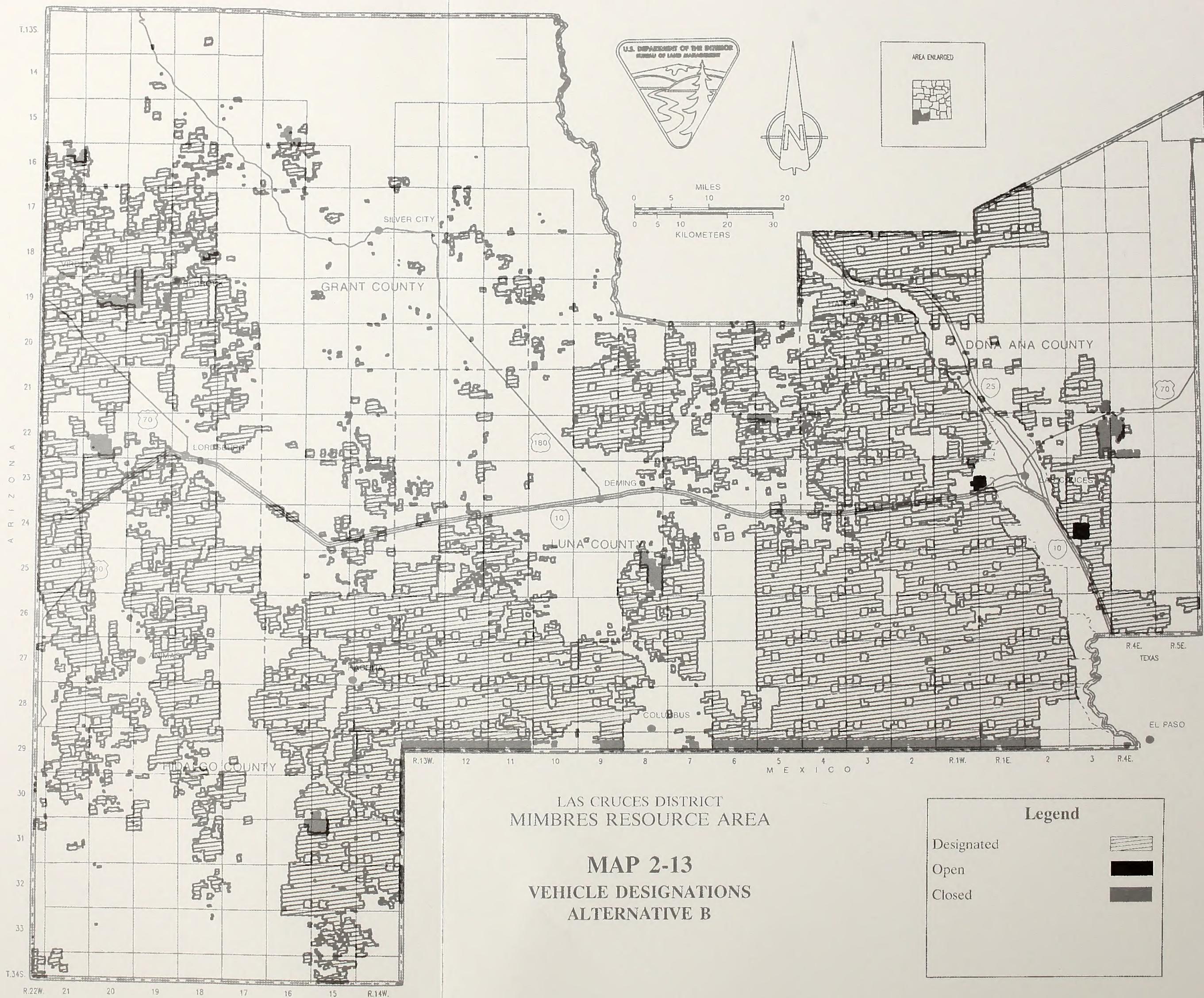










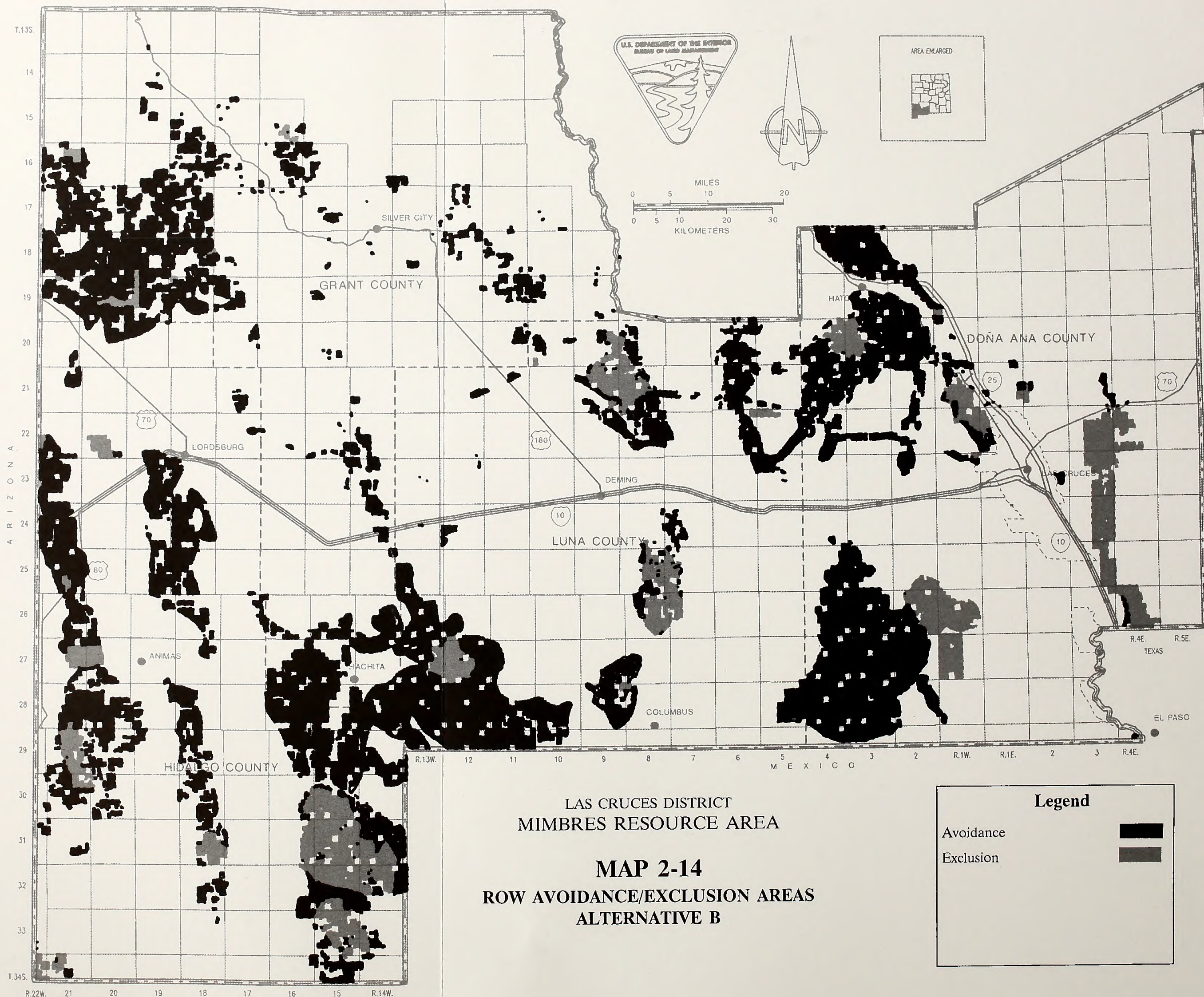


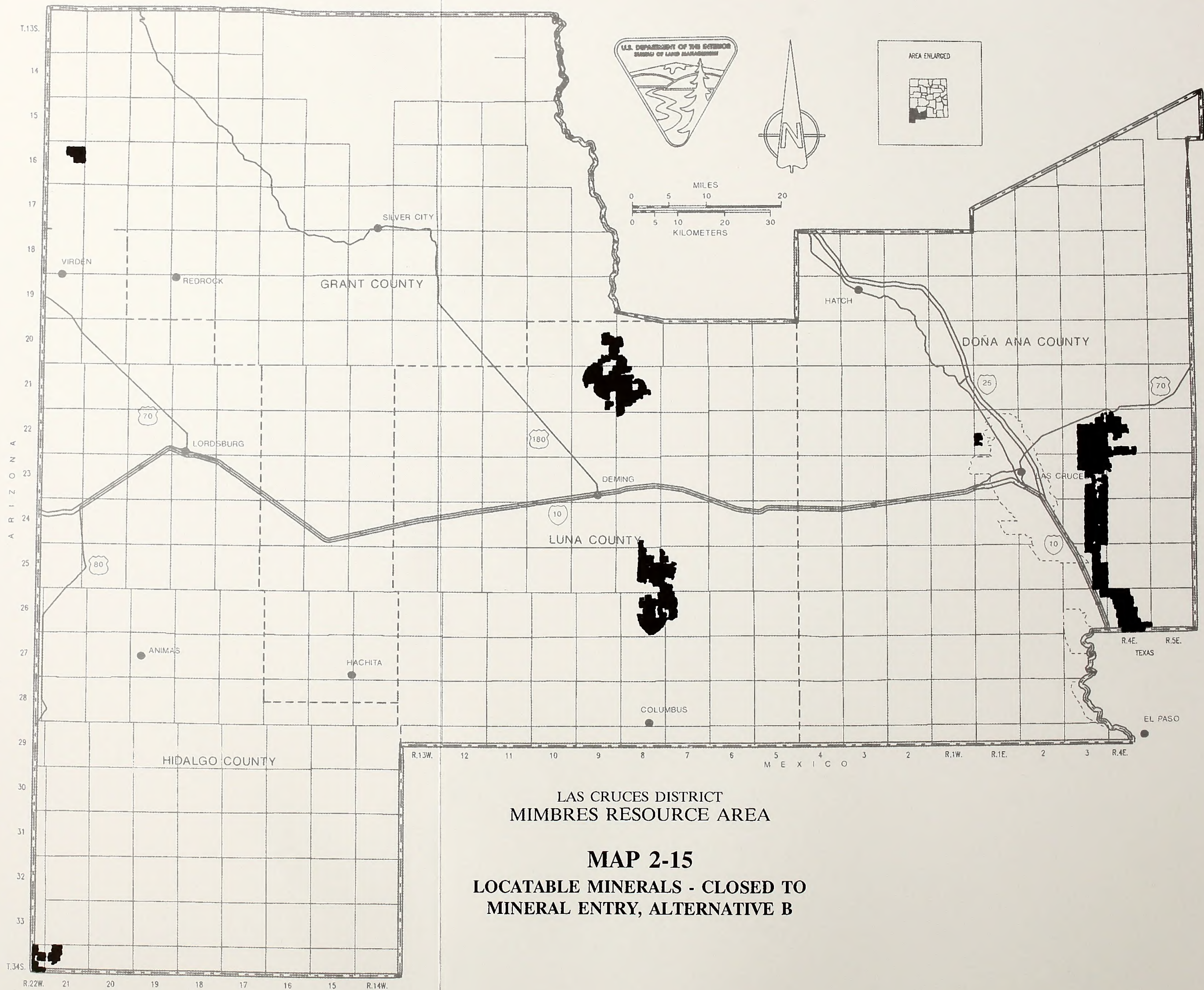
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MIMBRES RESOURCE AREA

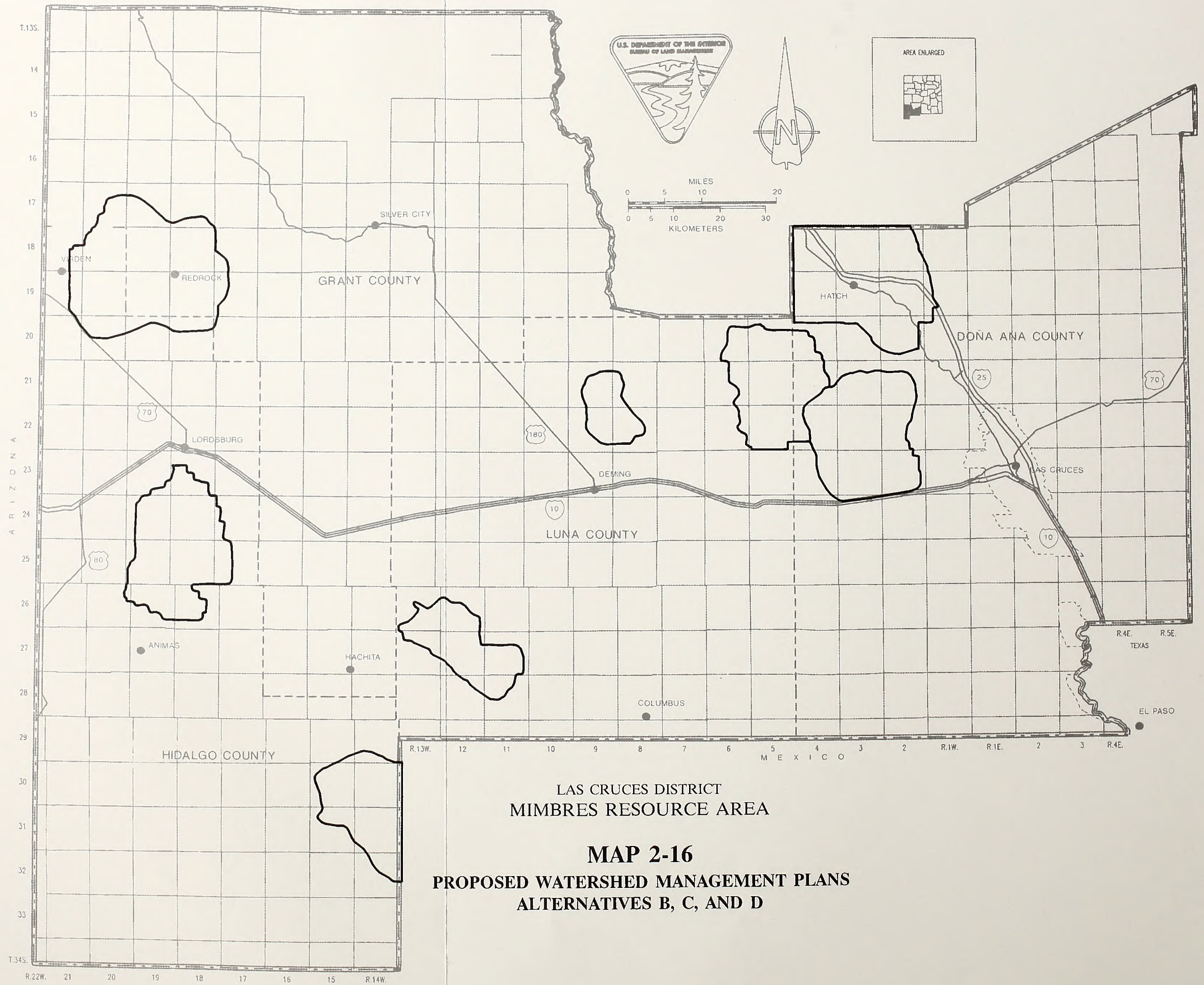
MAP 2-13
VEHICLE DESIGNATIONS
ALTERNATIVE B

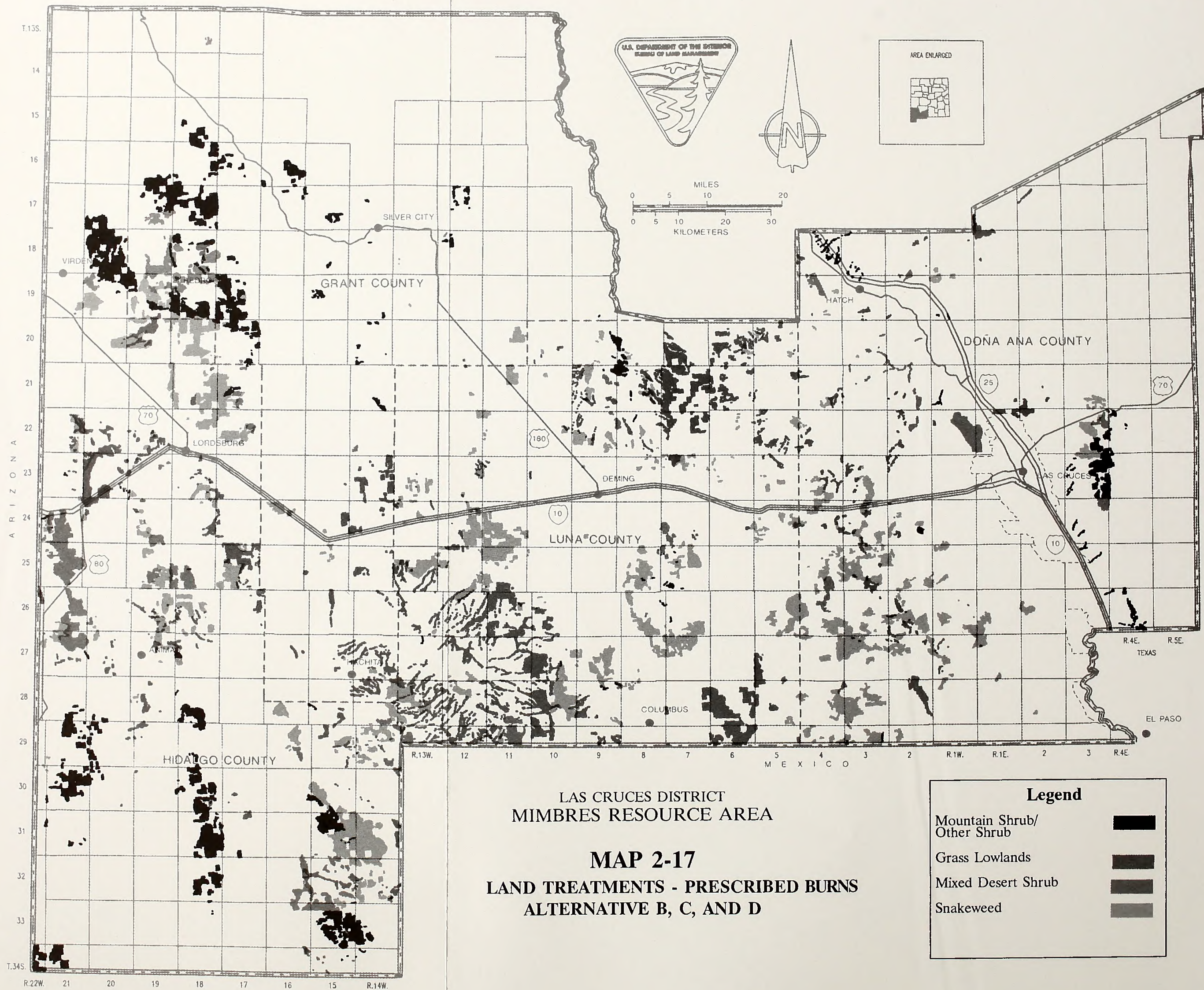
Legend

Designated	
Open	
Closed	







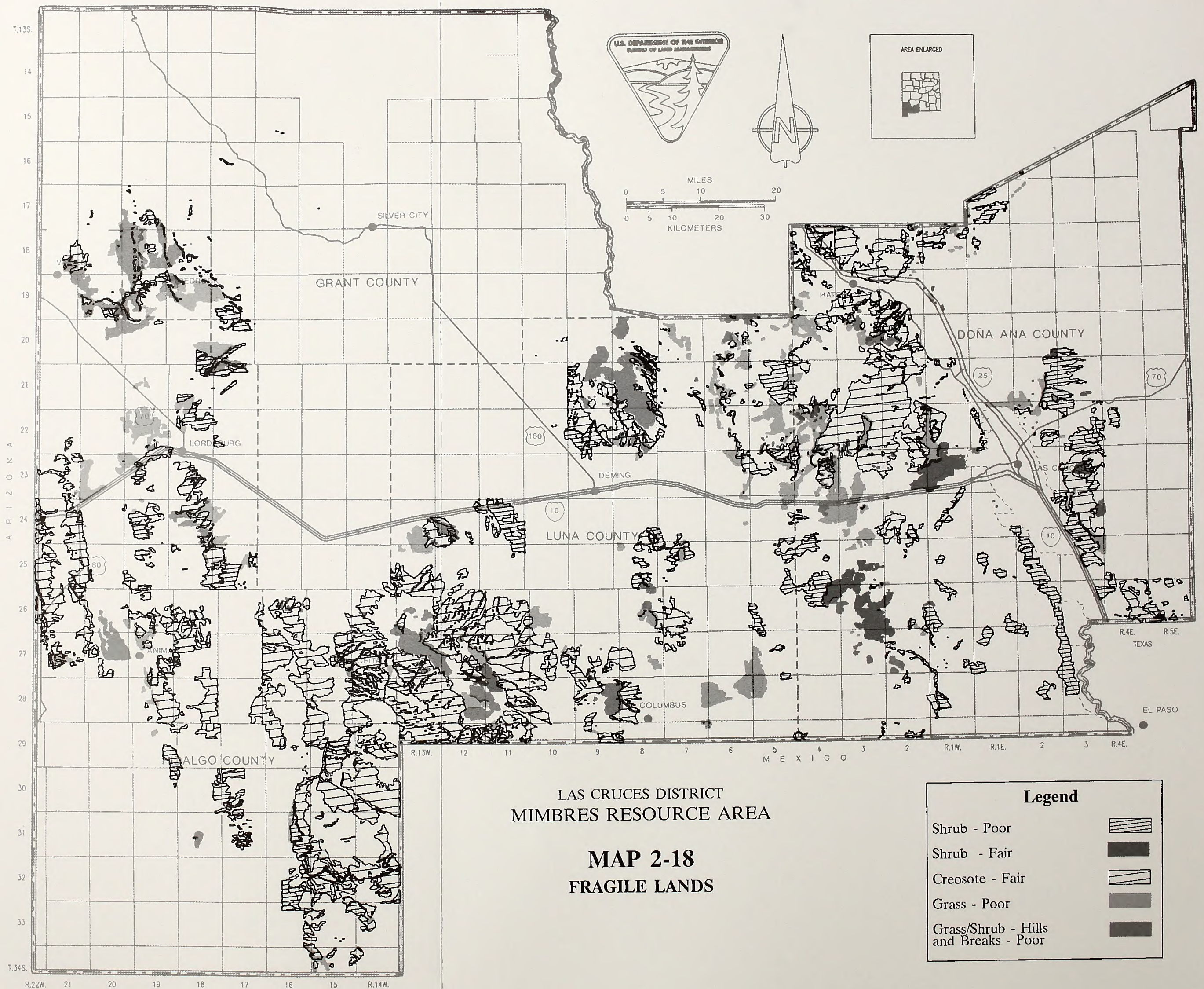


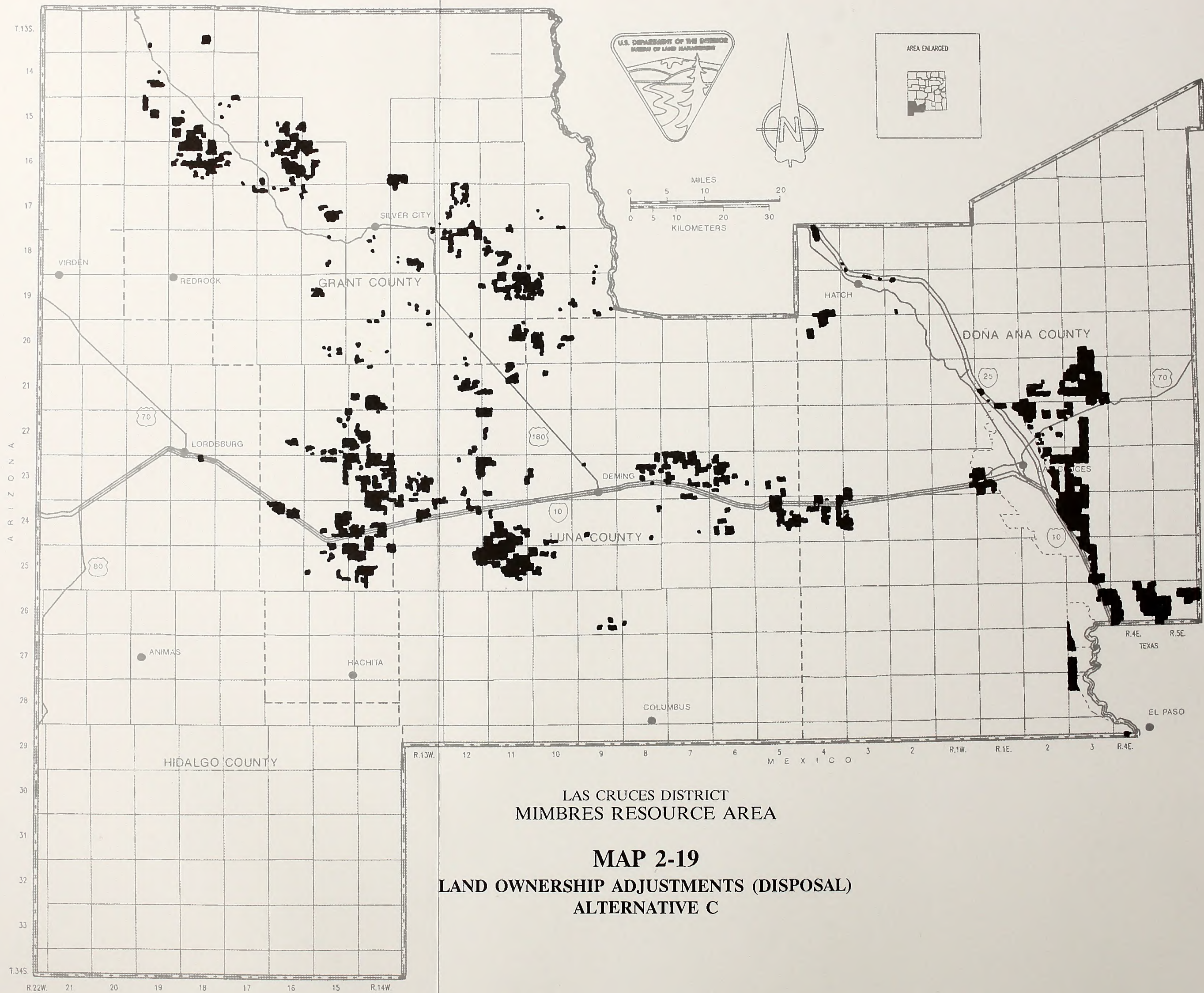
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MIMBRES RESOURCE AREA

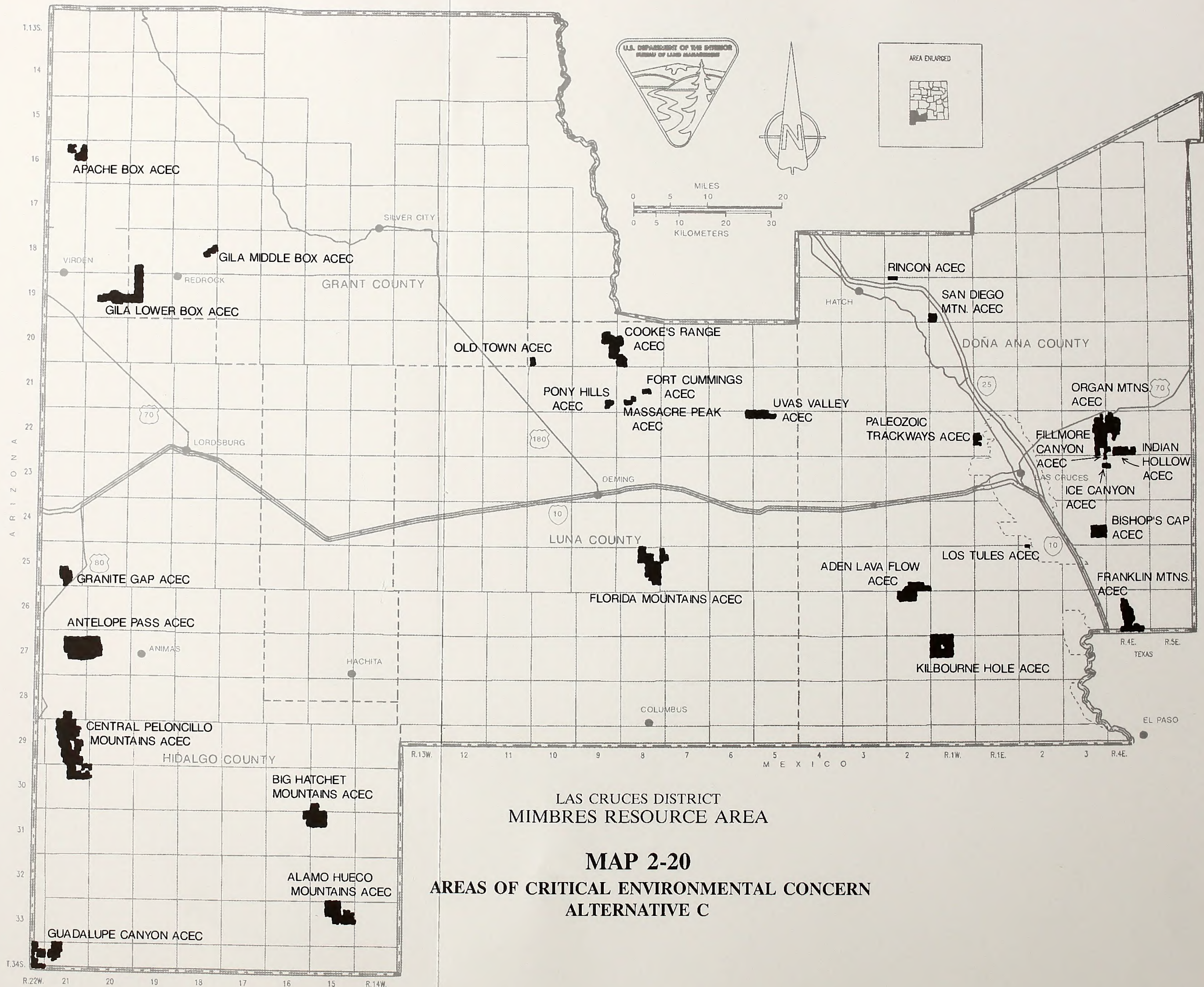
MAP 2-17
LAND TREATMENTS - PRESCRIBED BURNS
ALTERNATIVE B, C, AND D

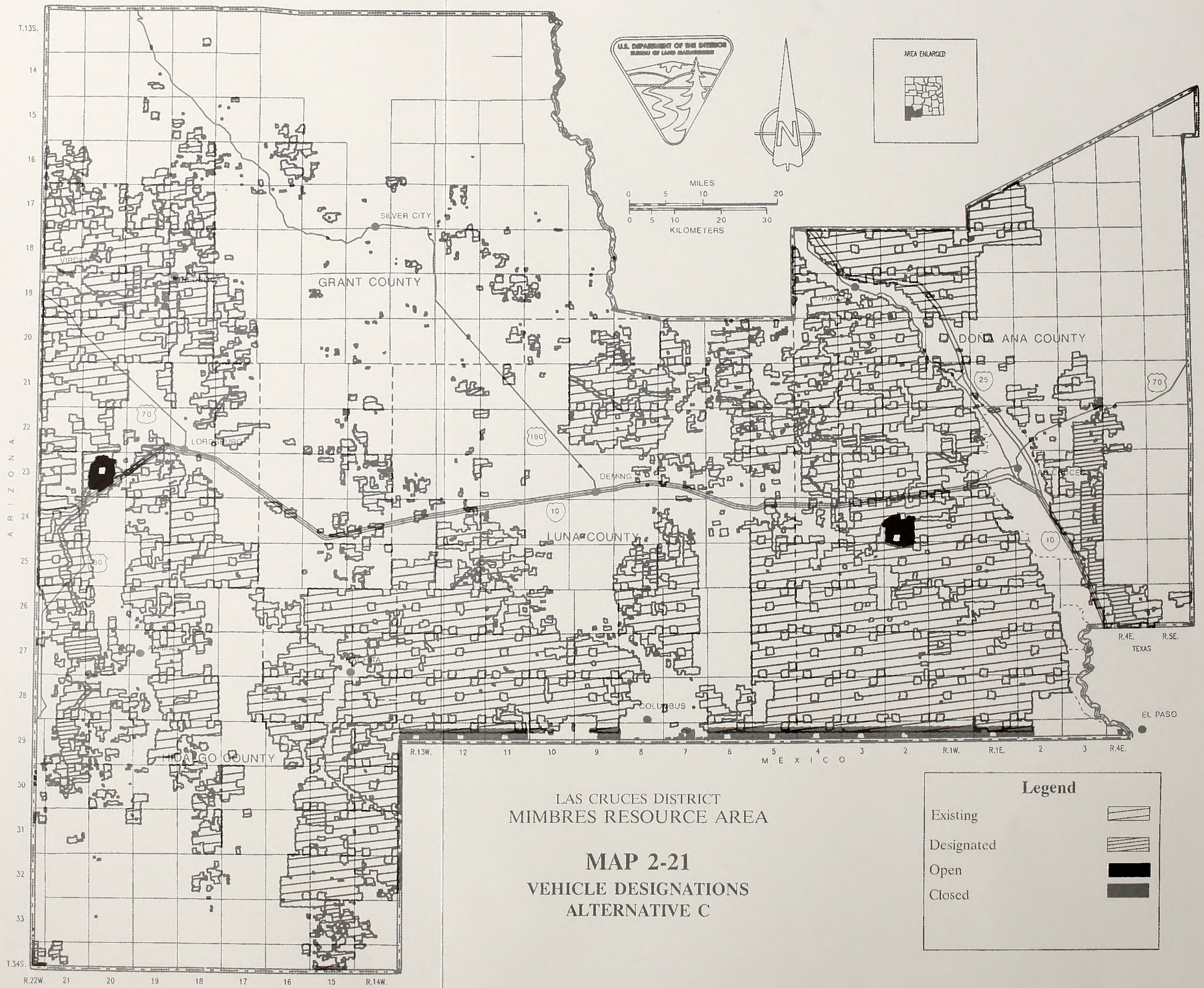
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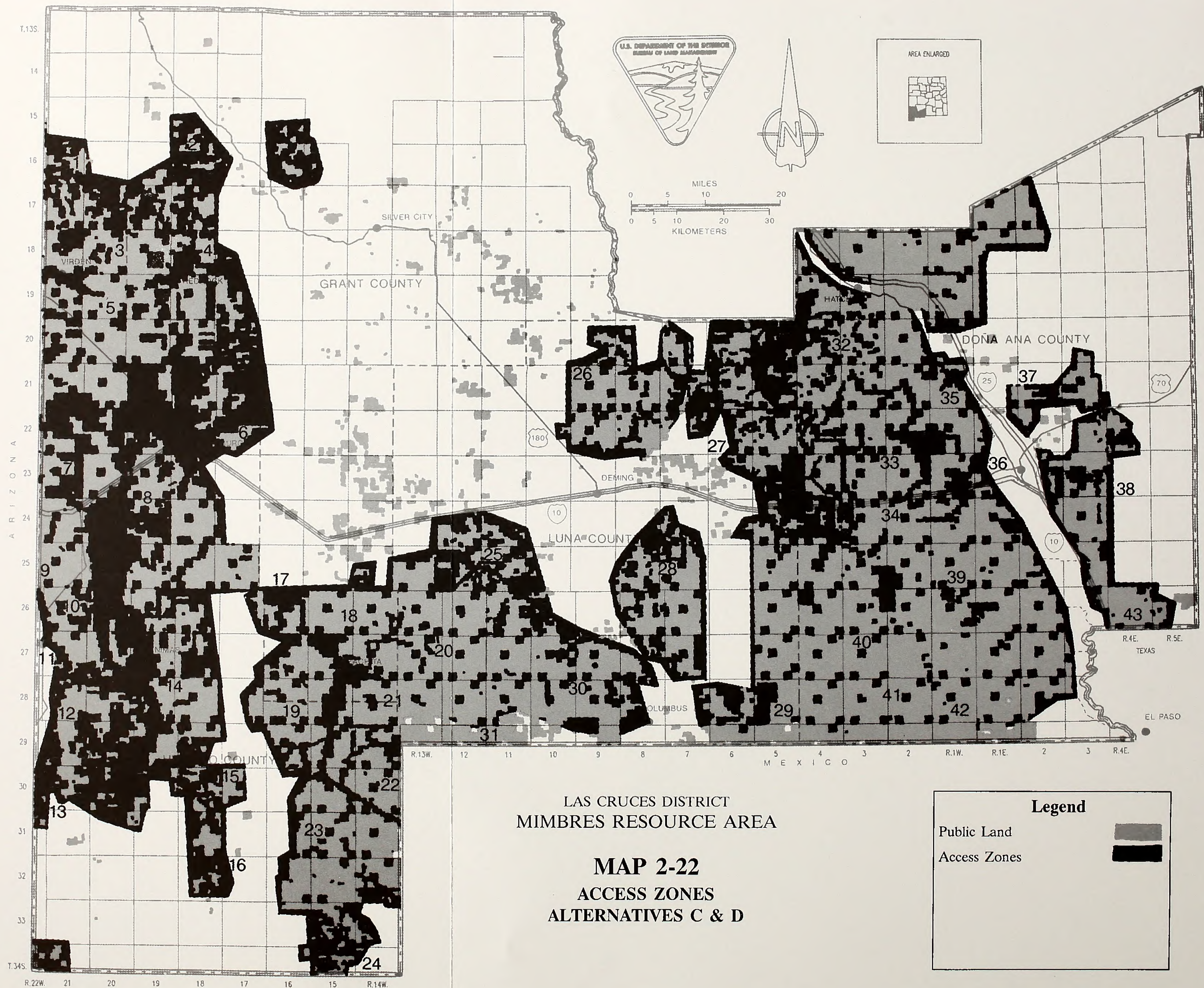
- Mountain Shrub/
Other Shrub
- Grass Lowlands
- Mixed Desert Shrub
- Snakeweed

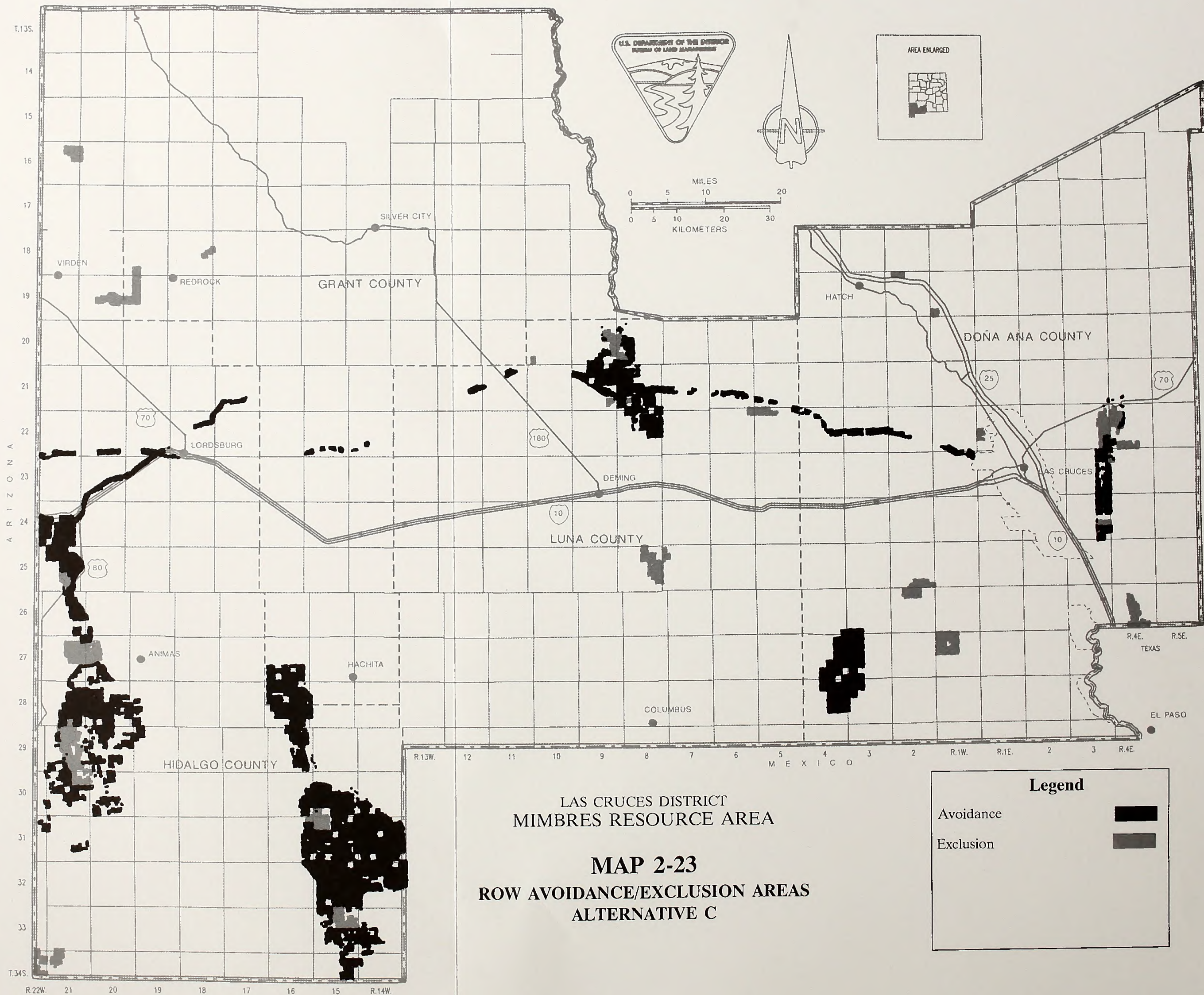


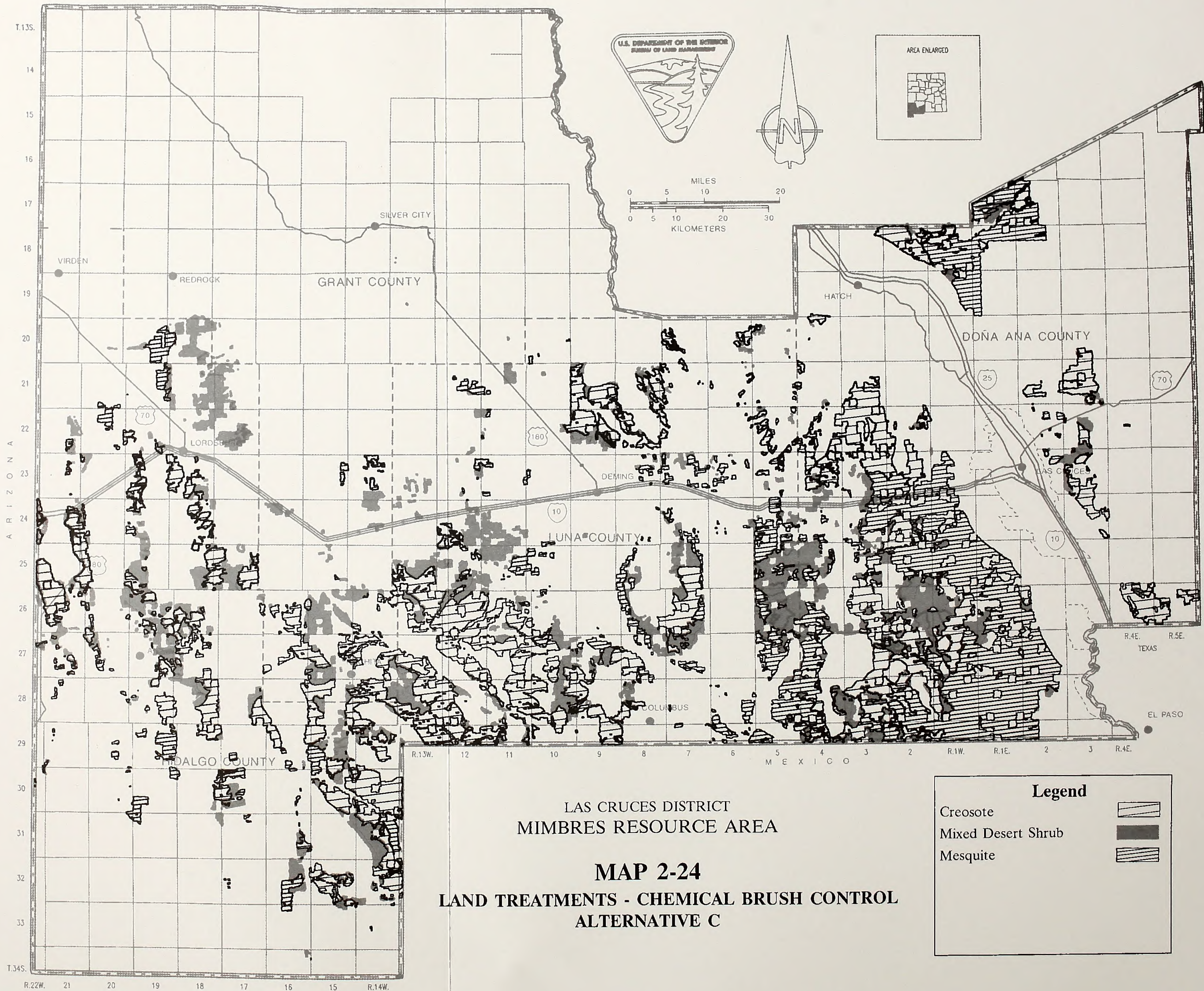


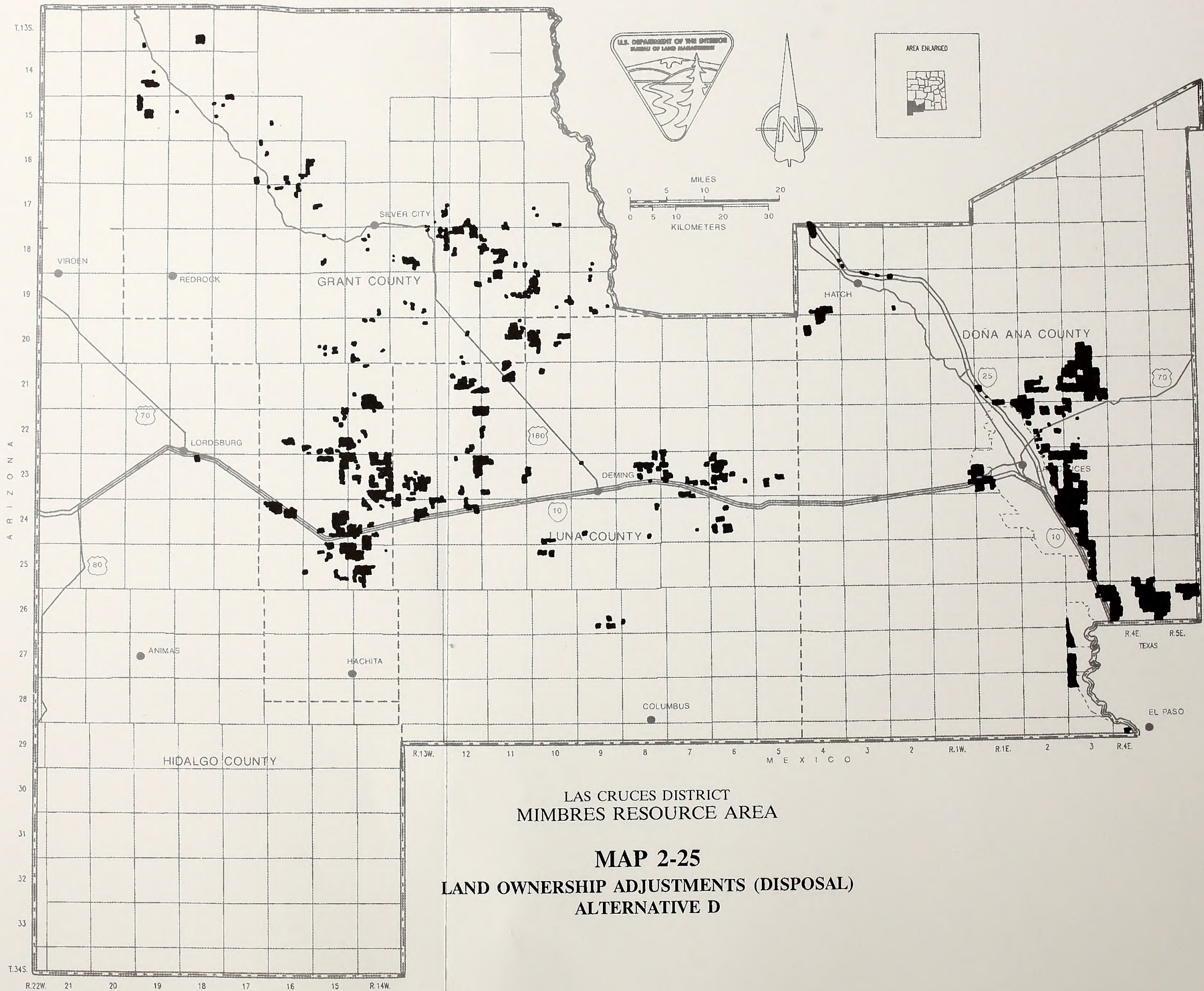


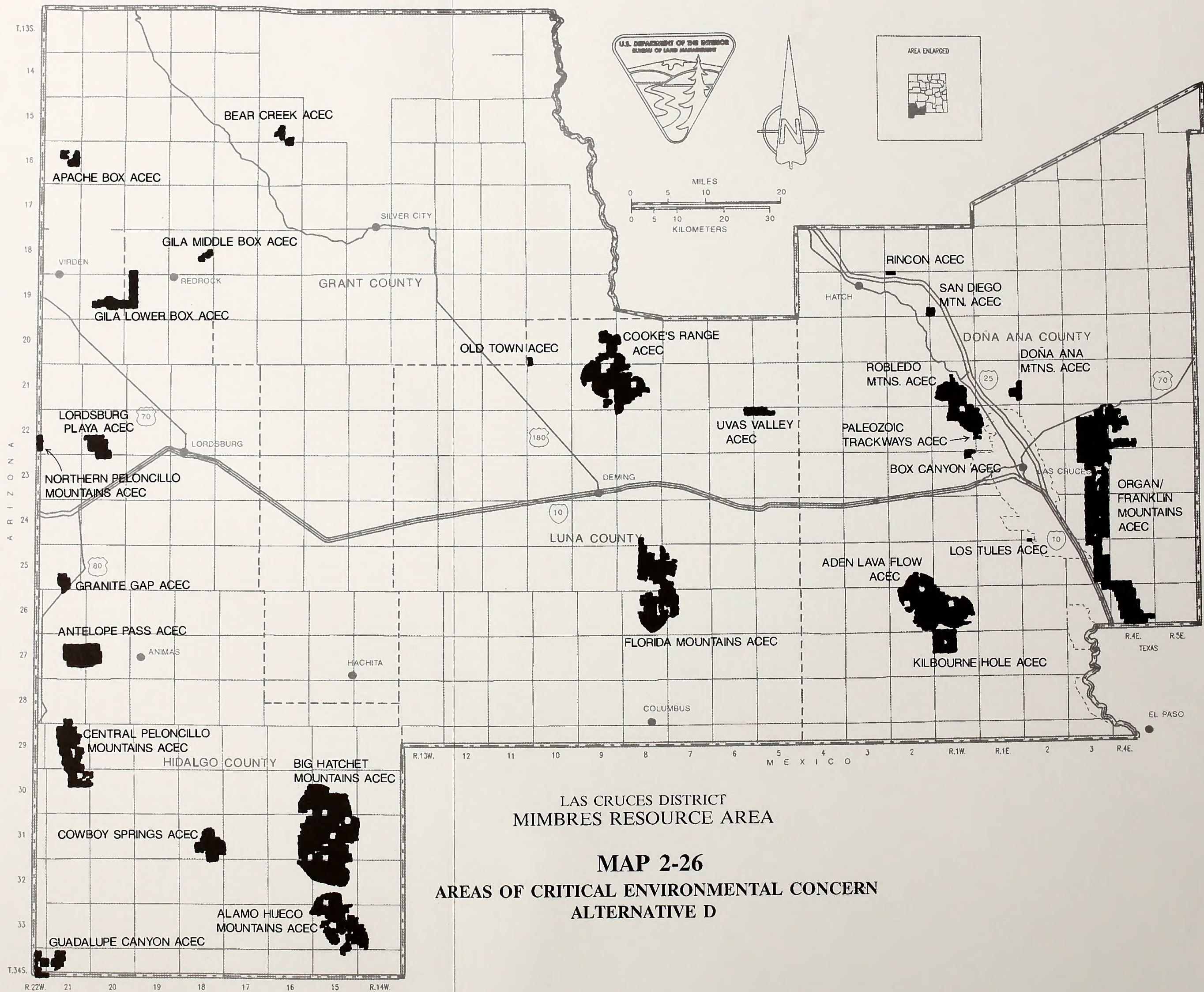


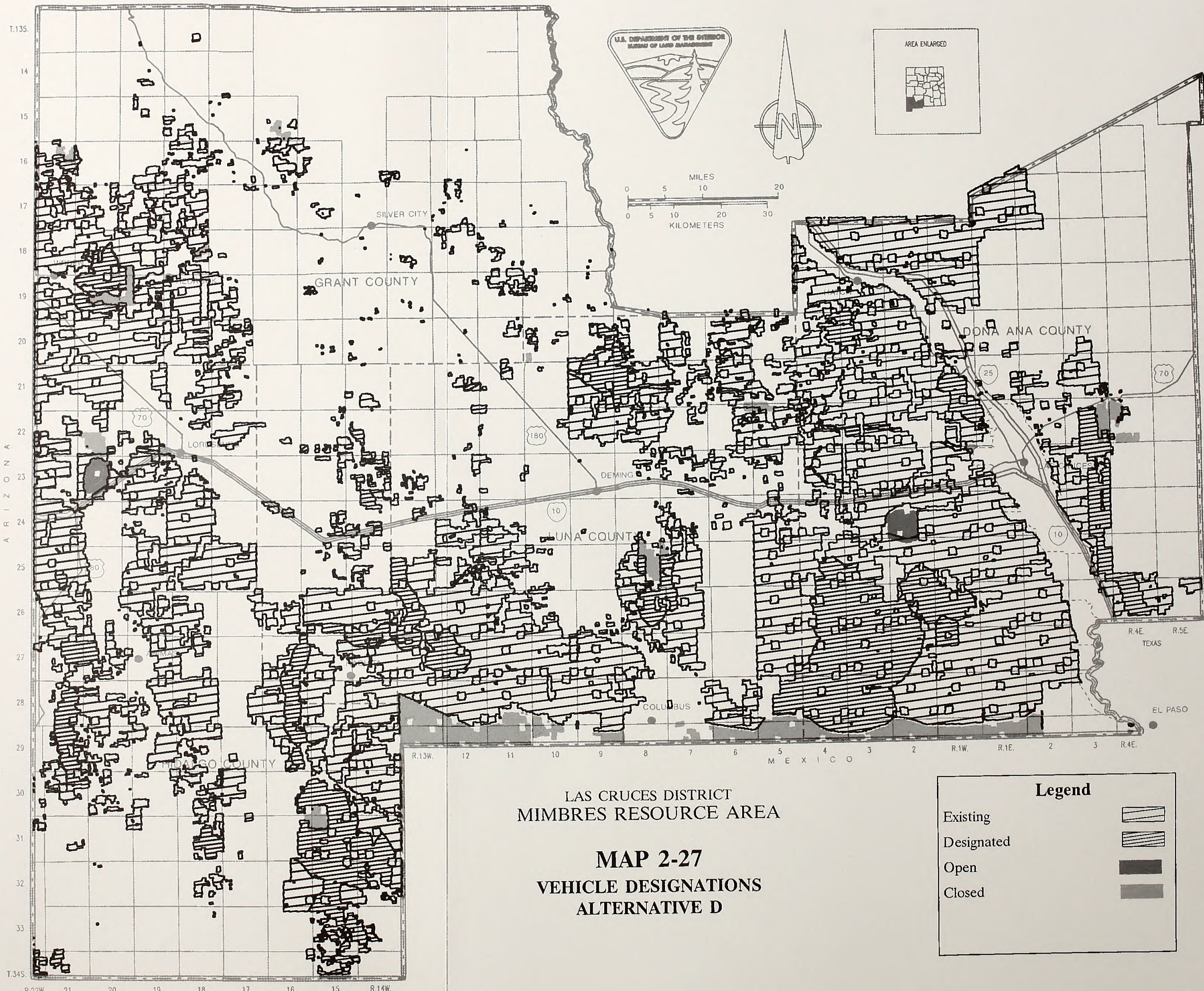










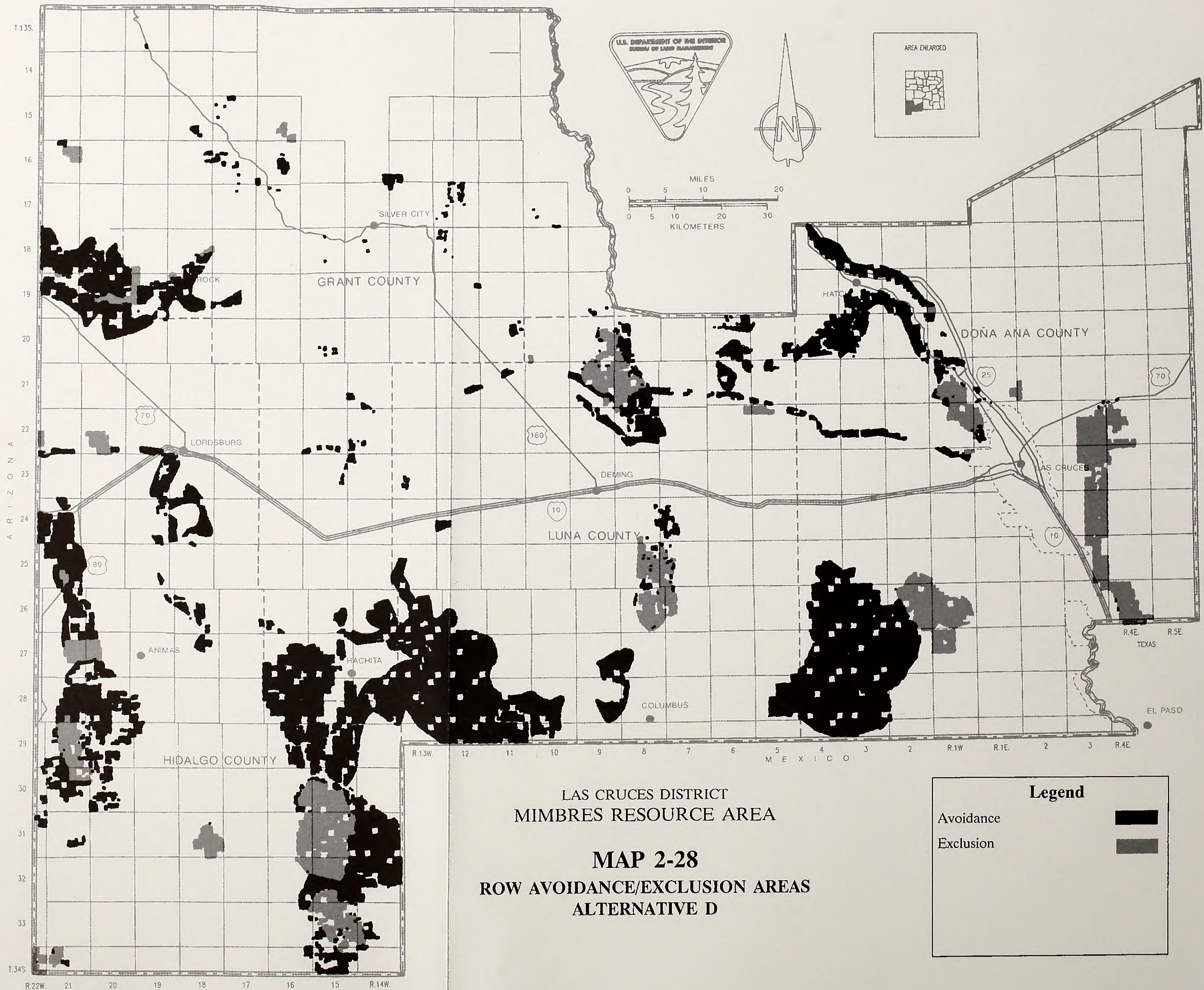


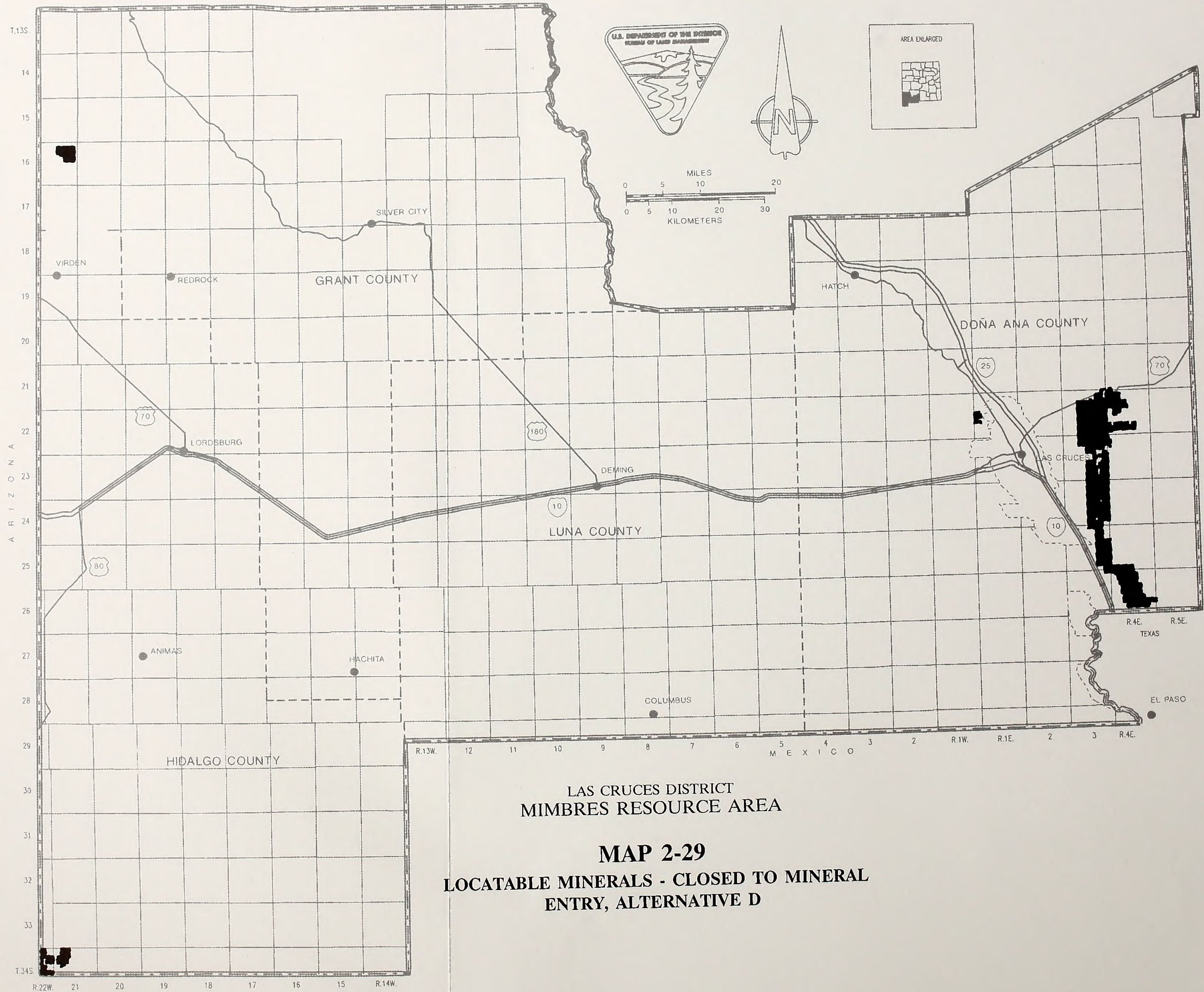
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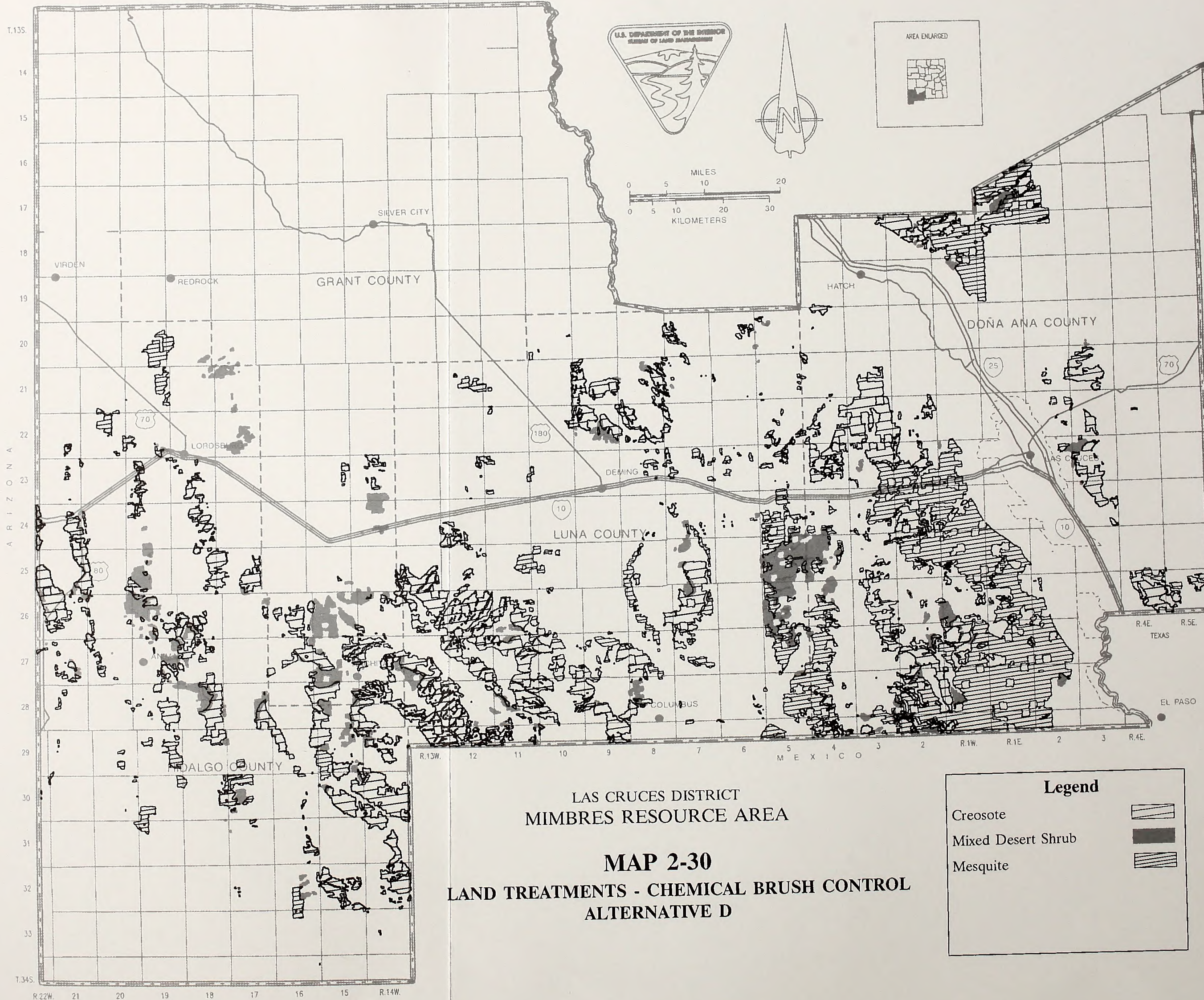
MAP 2-27
VEHICLE DESIGNATIONS
ALTERNATIVE D

Legend

Existing	
Designated	
Open	
Closed	





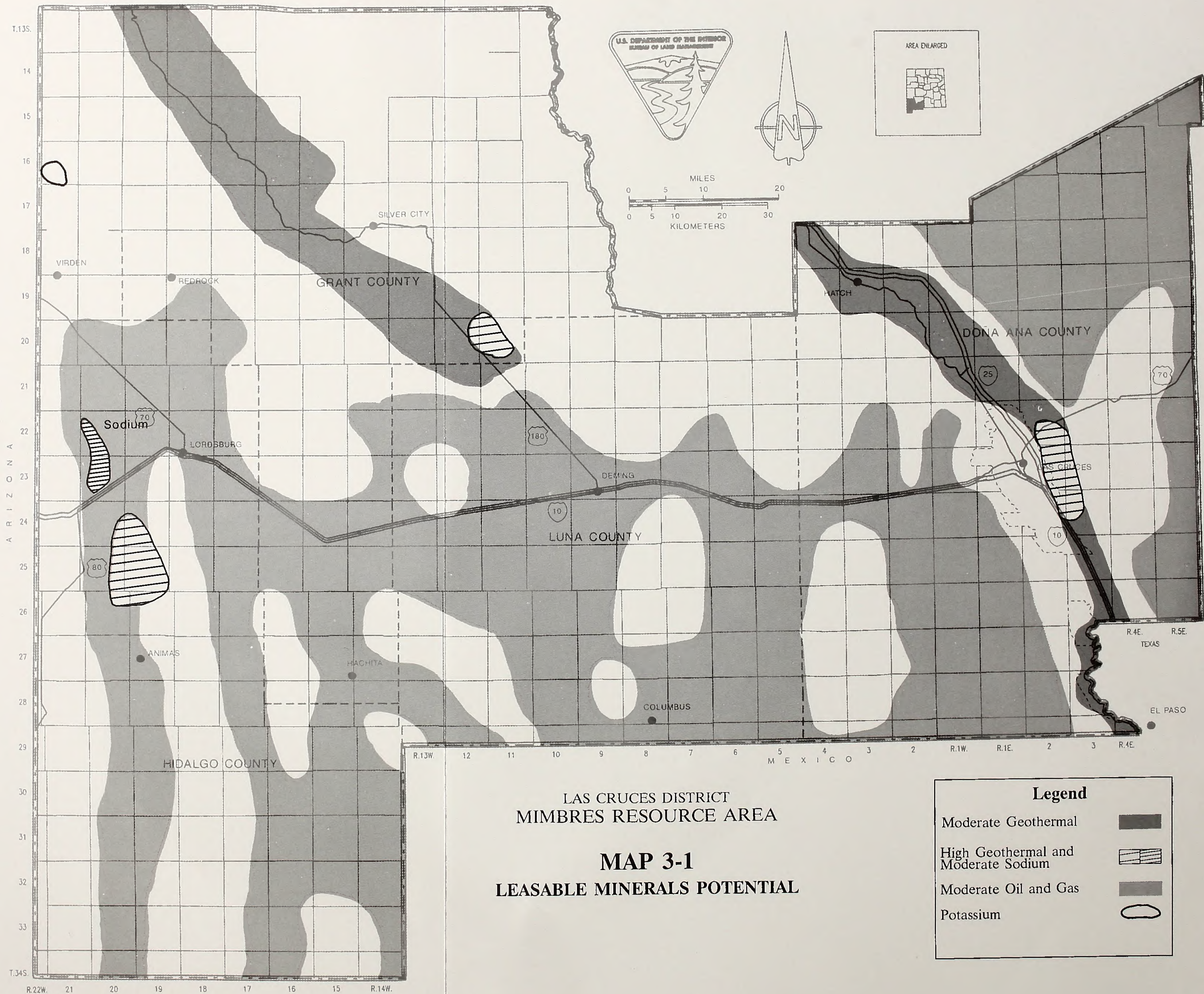


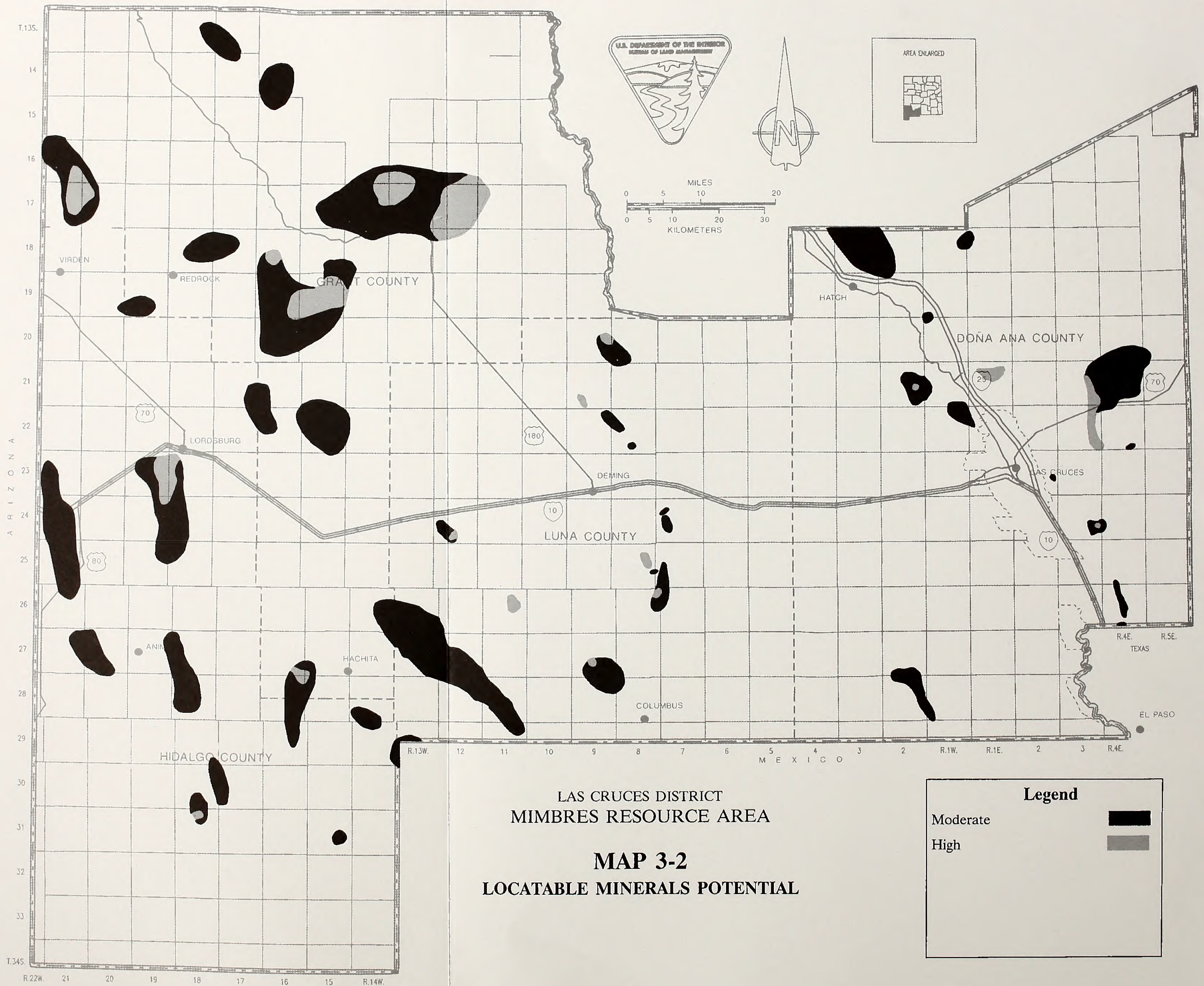
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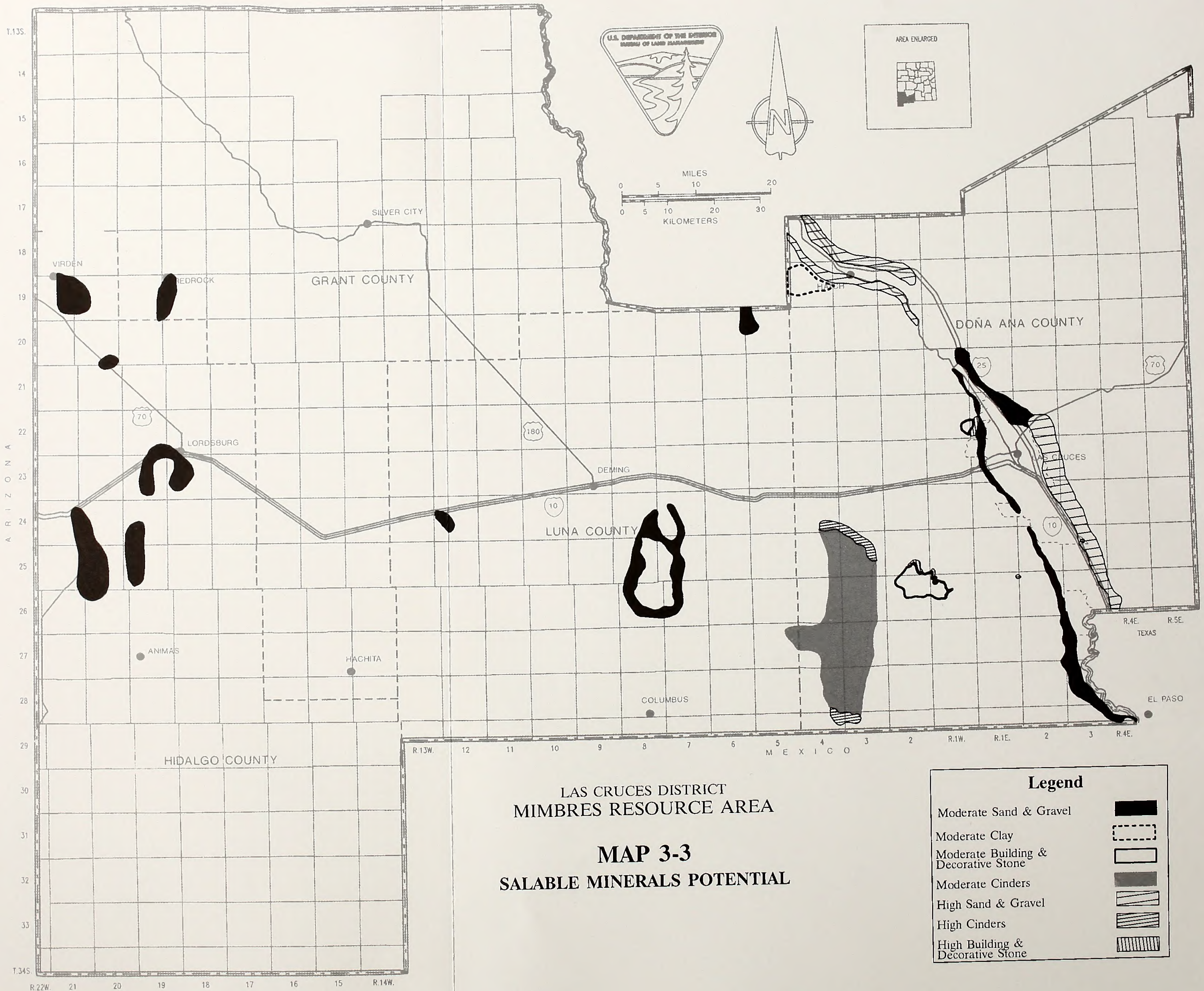
MAP 2-30
LAND TREATMENTS - CHEMICAL BRUSH CONTROL
ALTERNATIVE D

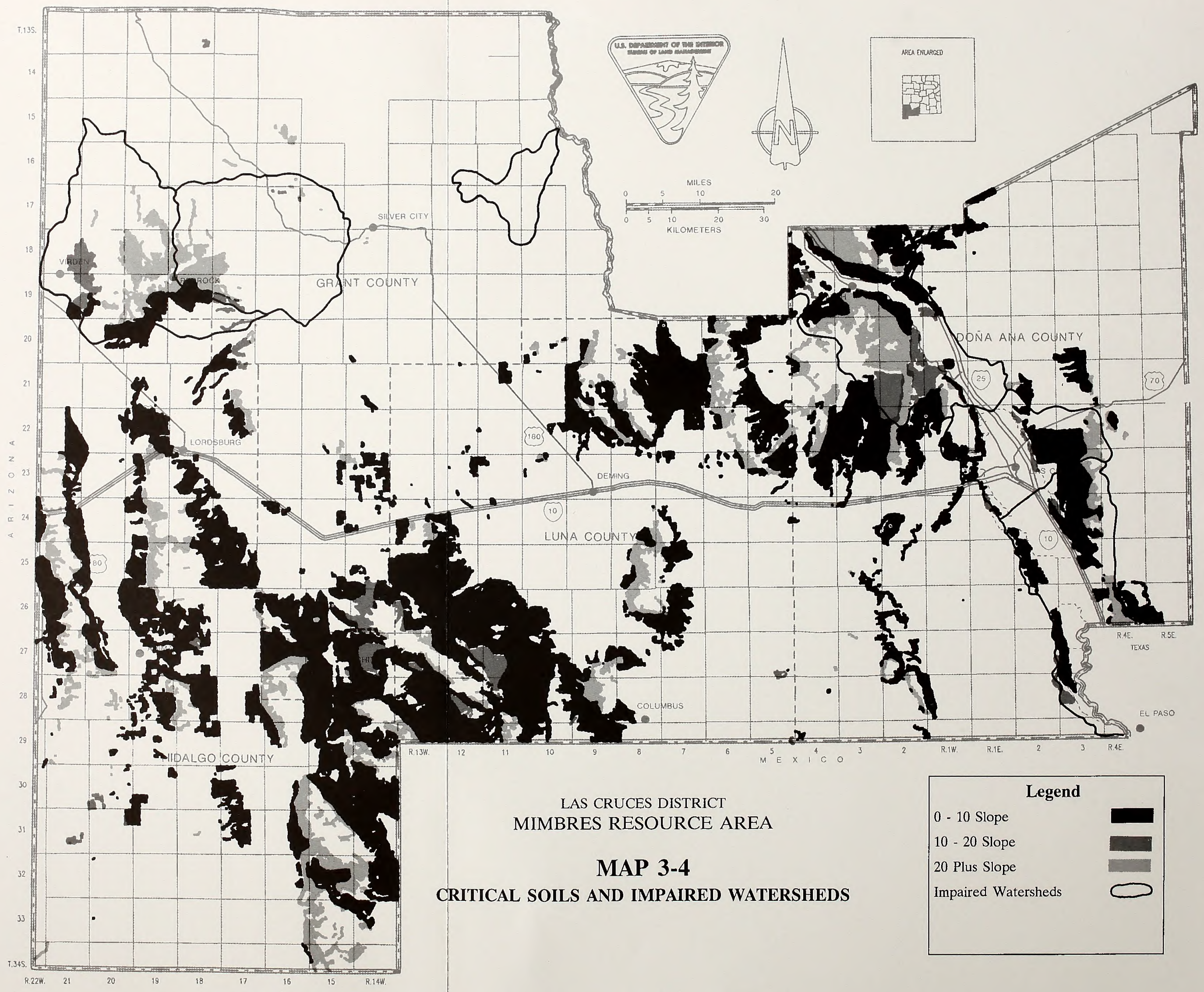
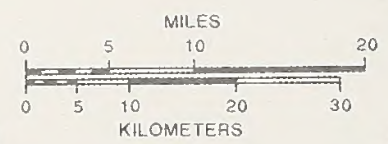
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Creosote	
Mixed Desert Shrub	
Mesquite	







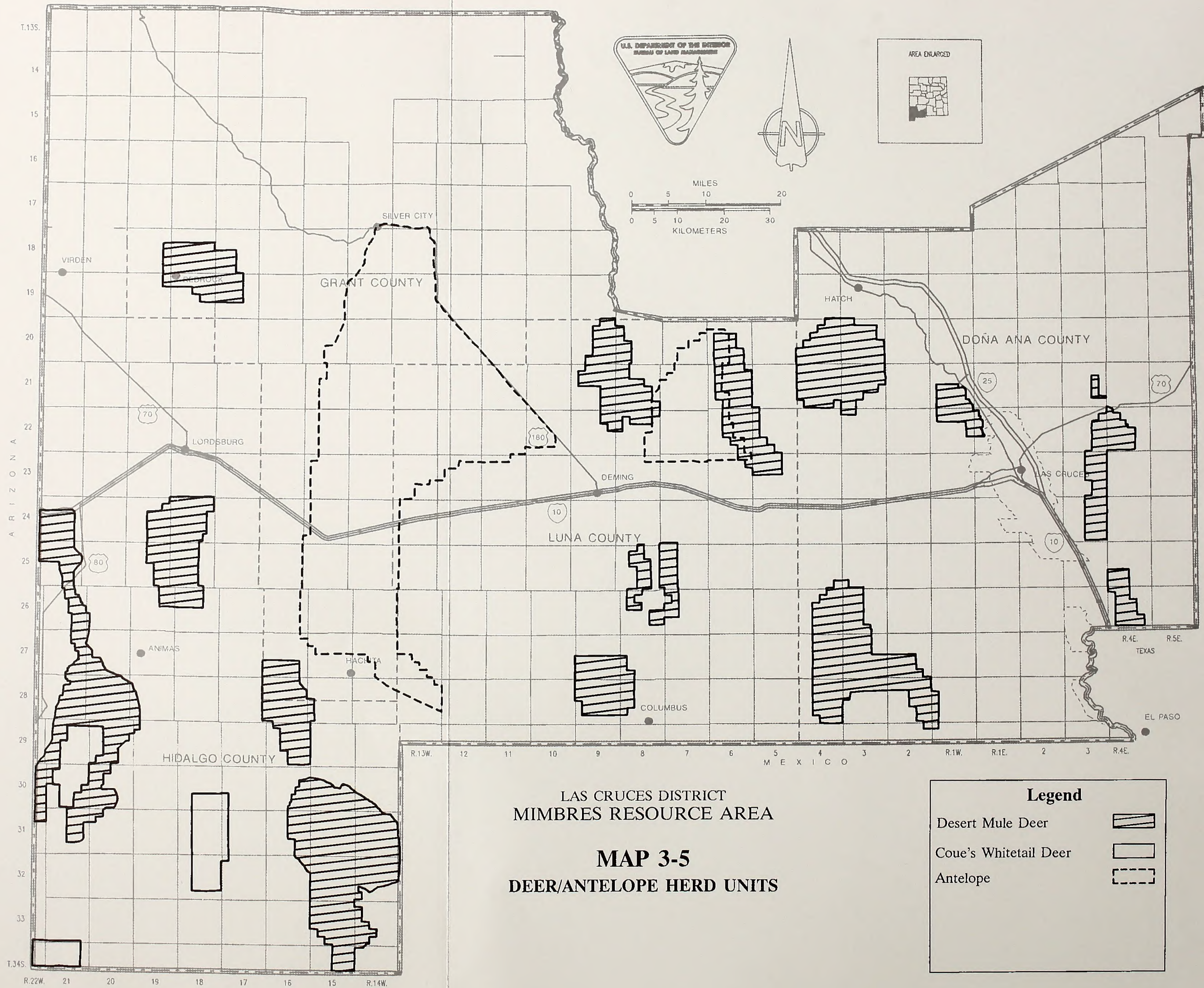


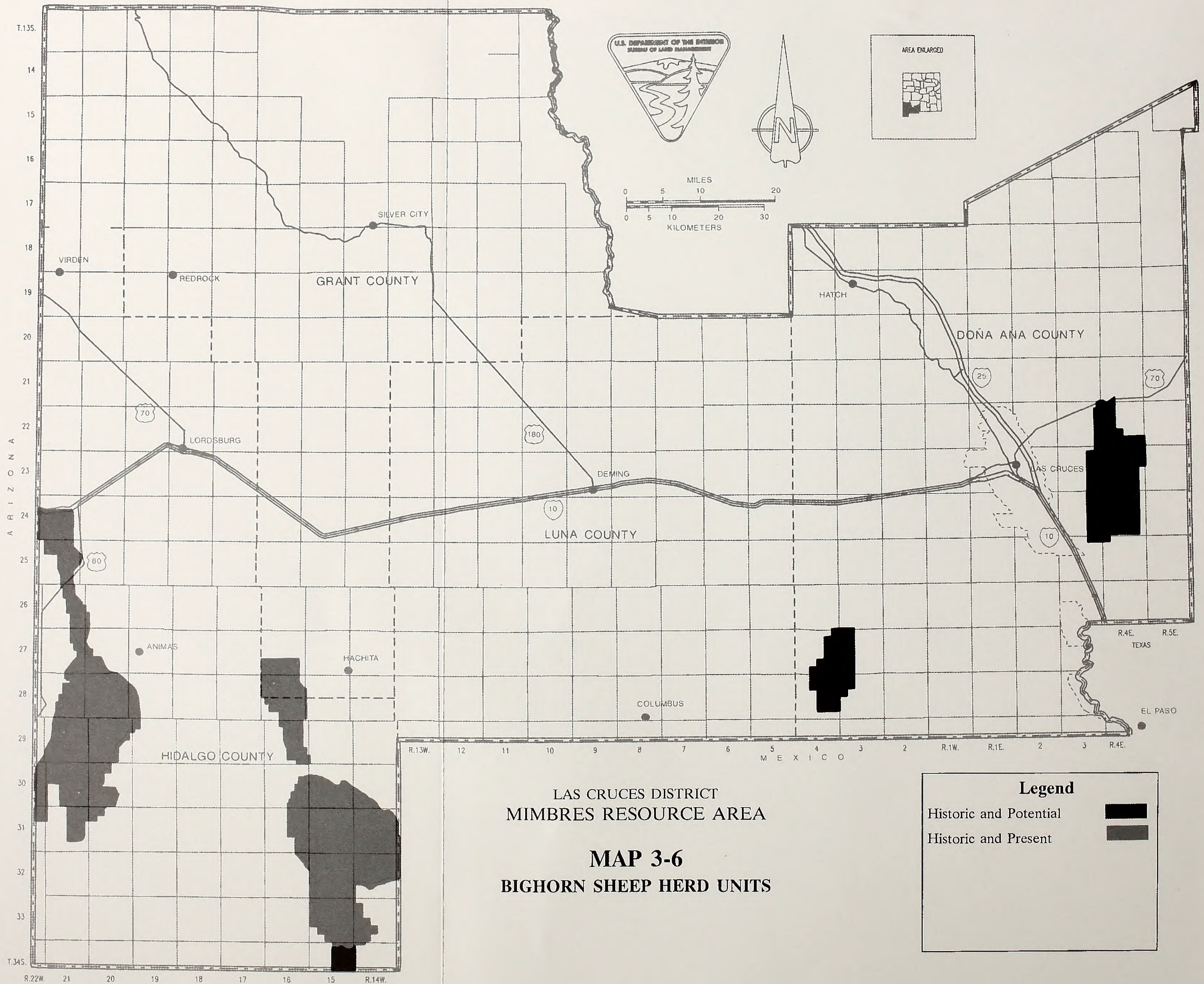
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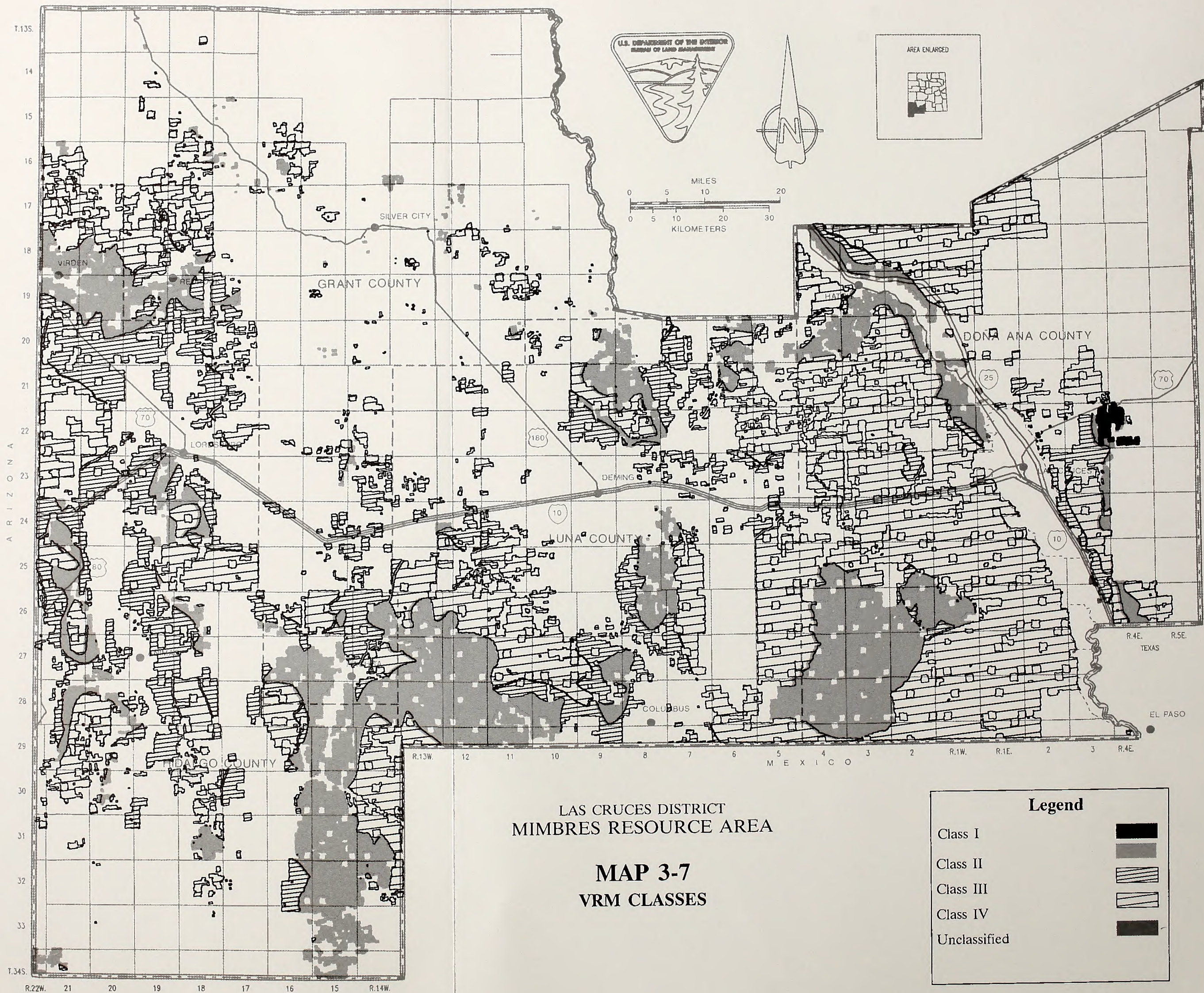
MAP 3-4
CRITICAL SOILS AND IMPAIRED WATERSHEDS

Legend

0 - 10 Slope	
10 - 20 Slope	
20 Plus Slope	
Impaired Watersheds	







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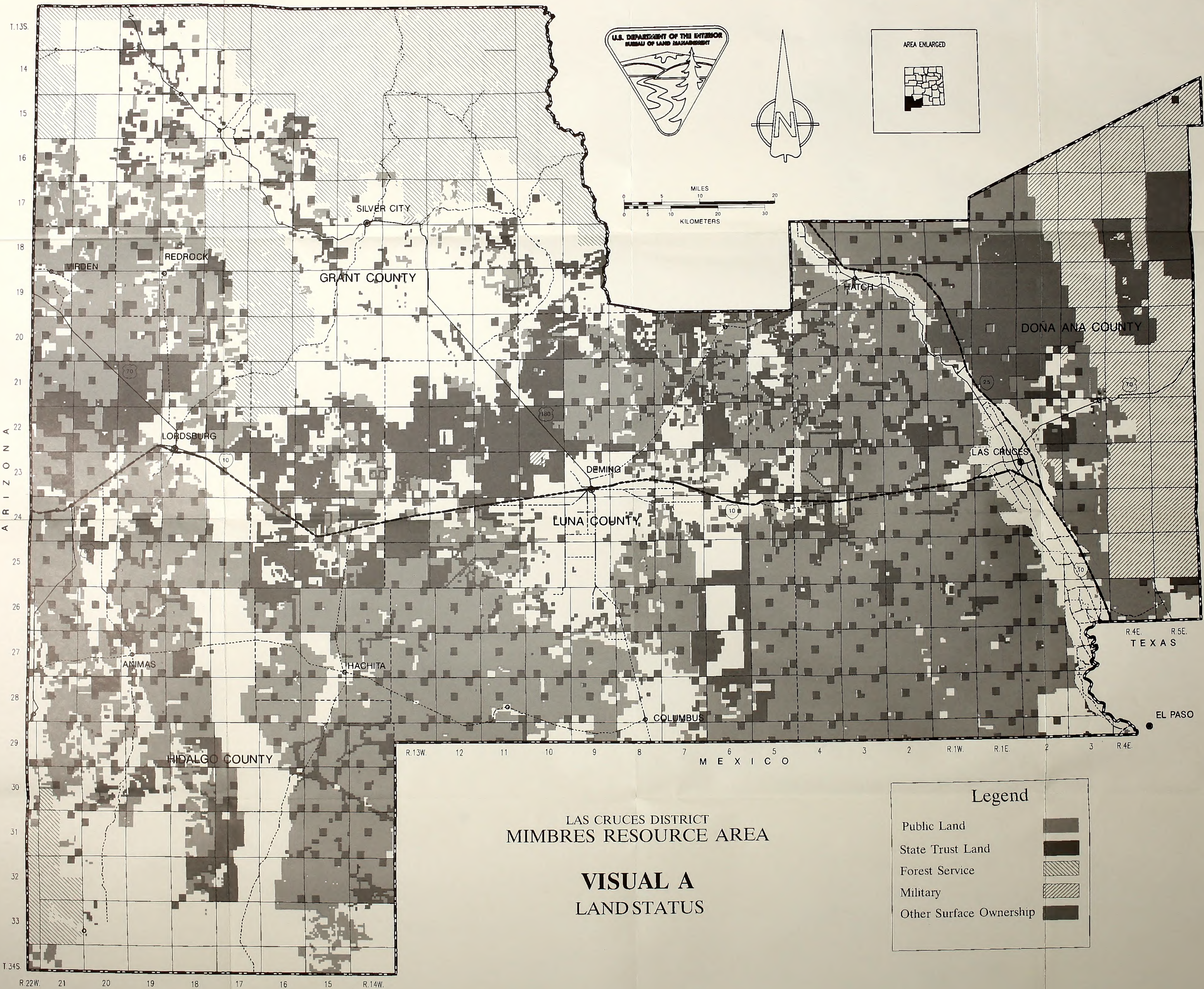
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LAS CRUCES DISTRICT
MIMBRES RESOURCE AREA

VISUAL A LAND STATUS

Legend

Public Land	[Light Gray Box]
State Trust Land	[Dark Gray Box]
Forest Service	[Diagonal Lines Box]
Military	[Cross-hatch Box]
Other Surface Ownership	[Solid Black Box]

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